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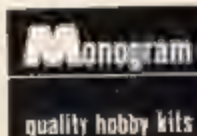


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MODEL CAR SCIENCE

VOLUME 7, Number 7

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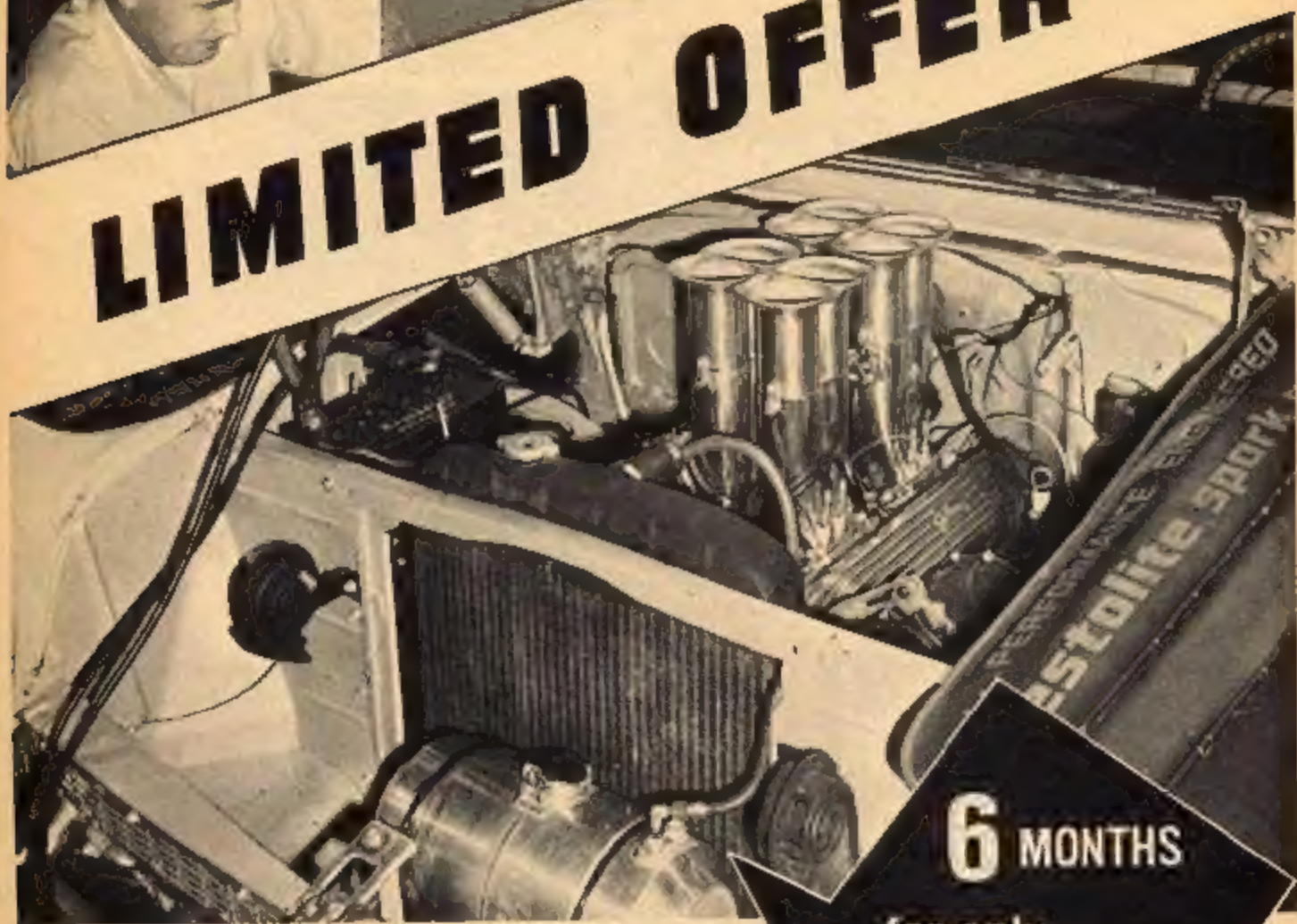
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marker over the entire area and let dry, repeating the application until the desired color is reached. The "permanent" types of markers seem to work best.

Eddie Curtis
Providence, R.I.

Thanks, Eddie. Sounds like a good tip to try on the "Oakland Roadster" rod in this issue.

TINY SCRATCHES

I've a couple of problems that seem to occur with most of my modeler friends kits too. First, how can you remove the tiny scratches from those clear plastic windshields? Second, why can I only paint ONE car with a full can of spray paint? I only apply four or five coats, and it seems a full can should last longer than that!

Bob Clark
Kitchener, Ont., Canada

For the first one, Bob, try using a fine grade of metal polish like "Brasso" on the scratched area, followed by a polish with some tube toothpaste, and finally with a coat of paste wax. You'll find your spray paints will cover the car better if the car is first painted with a flat primer coat (black, grey, or white, whichever is nearest the shade of the finish color). The primer also helps to keep the finish coats from building up around edges and lines.

HO PIT MEN ?

I have searched and I can't find any HO scale "pit men" for my trackside pits. I've noticed many such miniature people in the "HO Track of the Month" photos. Where can I get them?

Greg Petersen
Omaha, Nebr.

Again, Greg, you might have to try somewhere other than a toy store. Most model railroad shops carry hundreds of HO scale figures. The Freiser brand figures are pre-painted at about \$1.25 per set of six. The No. 63, 64, 66, and 90 sets are best for pit areas. Many of the imported Airfix soldier sets can be painted or bent to make excellent HO pit figures and/or spectators. These unpainted sets include about 50 figures for a dollar.

OBTAINING "OBSOLETE" ITEMS

I have a number of back issues of Model Car Science and your sister magazine as well as several \$1 books on slot racing, and Robert Schleicher's

MODEL ROAD RACING HANDBOOK. Many of these feature parts or cars that my dealer says are no longer available. Where can I get "obsolete" parts from such firms as V.I.P., Auto Hobbies, etc.? Also, are any back issues of Model Car & Track available?

Robert Lenander
Columbus, Ohio

The only way you can find out-or-production parts is to search, Bob. Try the yellow pages under both "Hobby Supplies" and "Toys" in any of the larger cities. Most have at least some "obsolete" stock that may include just what you're looking for. We have NO back issues of Model Car & Track available. They're now collectors' items. There are a few back issues of Model Car Science on hand, but these, too, are rapidly becoming collectors' items. If you need one or two to round out your files, best order them now. If we can't supply, we'll return your money.

MODEL MAIL NOTE TO OUR READERS:

Each month we receive dozens of letters requesting specific answers to various model car problems. Those we feel might be of interest to a number of our readers are edited and reproduced in this column. Many of the letters cannot be answered for simple lack of time. If you have some inking your question would rate no more than a personal reply, your chances of getting one are far better IF you include a stamped, self-addressed envelope. We cannot guarantee to answer each and every letter even then, but many times a simple reply can be jotted off and returned IF we don't have to make a full scale letter writing project of the thing. We'll try our best to answer each letter with an enclosed reply envelope, however.



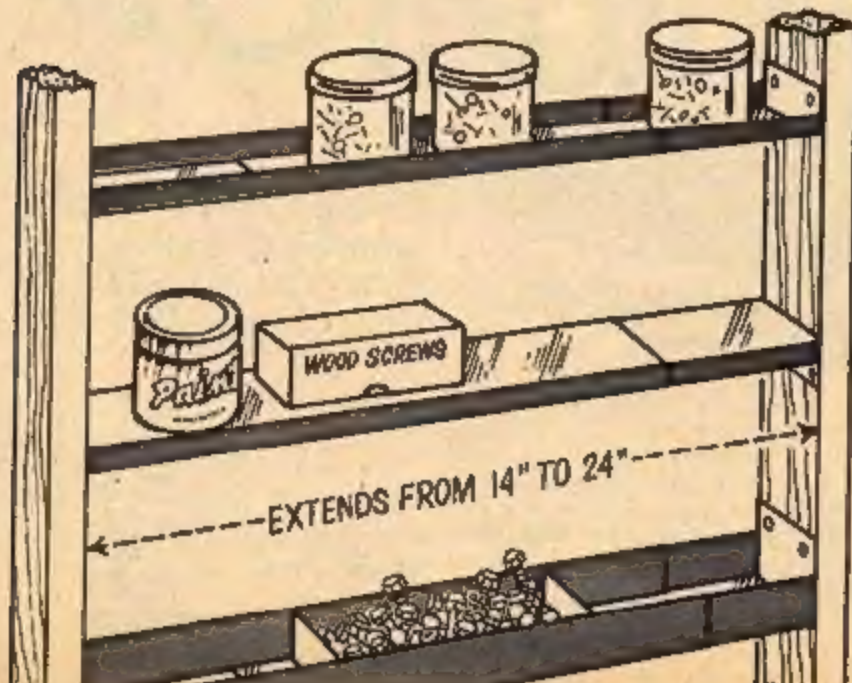
"Get some water...
get something, quick!"

NEW PRODUCTS



A new hobbyist's spray kit from the K.J. Miller Corporation, Dept. MCS, 8846 West 47th St., Brookfield, Illinois 60513, might be just the "ticket" for you! It consists of an air compressor, hose, shading brush with a fine and a coarse nozzle and two extra 2-1/2 oz. jars. Gives professional results. Write to the manufacturer for information.

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SMALL STUFF

EDITOR'S NOTE — Tom Payne, whose excellent column, "The HO Scene," has appeared in the past issues of MCS, has been forced to give up the column due to pressing business commitments. We hate to see him go. This new column, appropriately titled "Small Stuff," will be handled by Mr. Bill Von Staden. Welcome him, will you fellows? And address any correspondence for "Small Stuff," to Bill Von Staden, 77 Sherman Avenue, Jersey City, N.J. 07307.



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These new machined aluminum wheels, fitted with silicone rubber, also feature mag wheel inserts of the "American Mag" type to give your model racing cars that "real look." Auto World's HO Mag racing wheels are threaded to fit standard 0-80 HO axles. The complete set includes two stainless steel axles for front and rear as well as special nuts. The front wheels are fitted with hard rubber for better cornering, while the rear tires are extra wide silicone for better traction during acceleration. If not available locally, you can order direct. Send \$1.29 plus 25 cents packing and postage to: Auto World, 701 N. Keyser Ave., Dept. MCS, Scranton, Pa. 18501.

New developments are happening each week on the HO scene. They happen fast, and I'm not here to talk about the past, only the present and what's to come.

I guess you're wondering who I am, right? Well, I'll take up a little space by saying I'm a 19-year-old college student. My hobby is drag racing HO cars.

Don't get me wrong, I don't hate road racing, I used to do a lot of it, but I prefer to drag. The different types of racing require different types of cars, but sometimes one item will add more speed on any type of car. So here's hoping some of my primarily drag tips will help you road racers, too.

What's new, anyway? Well, let's start with AJ's. The people down at Twinn-K must be hard at work. Not only have they introduced a wider version of their silicone tire, but they've come up with a complete front end kit as well. The front end kit consists of hard rubber O-ring tires wrapped around aluminum hubs, a 0-80 threaded axle, and two jamb nuts. One word of warning: these tires are hard! If your track sections are misaligned, your car will feel it! The rear tires are the 110's that have been widened 1/32". That doesn't sound like much, but compare one to an older tire and see for yourself. But alas, the tire is much harder than before. This, I suspect, is not due to a change in rubber composition, but rather because the hub style has been changed. The hub used to have a "groove" around it where the tire seated; now it is solid aluminum. I'm hoping AJ's will remedy this soon. But, in the meantime, it is still the best HO tire available.

Attention road racers: Better get hold of a brass pan for the bottom of that hot little machine of yours. By the time you read this they should be almost universal. I guess I



The popularity of the Aurora Thunderjet cars has brought a number of high performance options from different manufacturers. Auto World's high performance magnets are the result of months of testing and will improve lap times on short or long courses in stock or rewound motors. They are performance engineered to increase acceleration, torque and braking effort. Packaged in matched pairs, price is 69 cents per pair at your local HO high performance parts dealer. Also available direct, send 69 cents per pair plus 25 cents packing-postage to: Auto World, 701 N. Keyser Ave., Dept. MCS, Scranton, Penna. 18501.

should call it the "Dreher pan" because, as far as I know, Carl Dreher had it first. They can be obtained from Mini-Wheels in Highland Park, New Jersey, and probably from Auto World and LaGanke Racing Products in the not-too-distant future.

For those of you out there who think that they have done everything possible to their cars, may I suggest that you write to the Hobby House. Check his ad in this issue. Send a stamp and Richard Harrison, owner of the Hobby House, will send you a three page price list that will blow your mind! He carries such things as special German magnets and brushes, going for thirty and twenty-five cents a pair respectively.

Rich also sells completely hopped-up cars, ready for wail, for those of you who like your cars professionally set up. The full house cars have metalflake paint jobs on them. I think this is one area where HO definitely has got to improve. Personally, I wouldn't run an unpainted car in competition. And how could you possibly run a "stretched" funny car unpainted?

Just so you know, some of the latest Aurora cars are showing up with some pretty strong magnets installed. They are easily identifiable by the white paint atop the rear one. I tested a pair in one of my drag machines, and if I'm right, they are almost as strong as super magnets! But, again, I've heard that LaGanke has introduced an improved super magnet, so here we go again.

Questions of the month: Will Aurora see fit to make a Javelin? Why is the clear plastic Charger by Lancer so narrow? Why were all the Aurora Formula 1's called back to the factory? Where is Champion?

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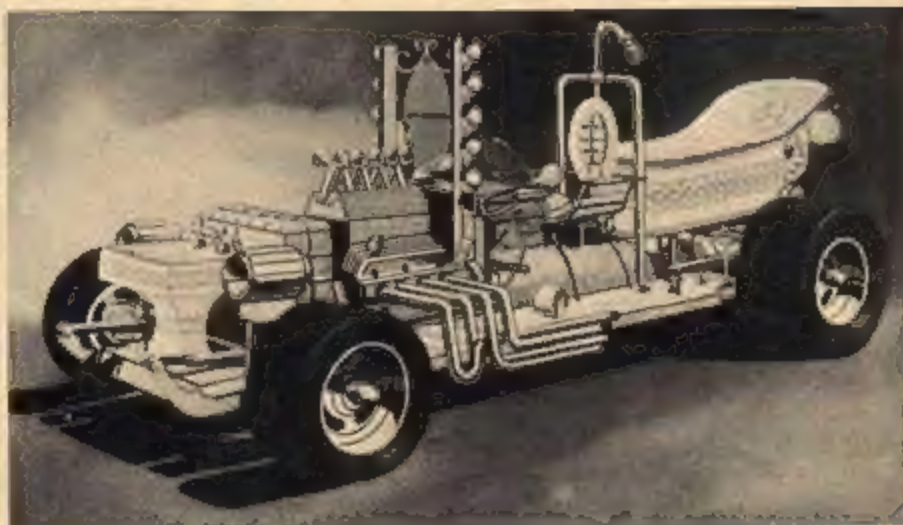
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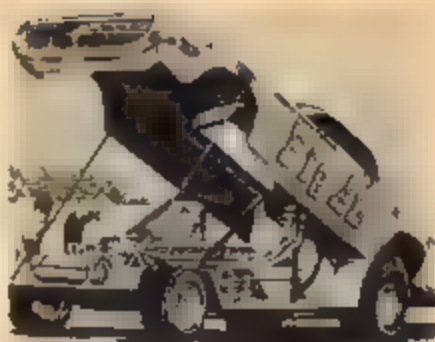


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A new slot racing company has just released reasonably priced hardware for all serious racing buffs: Arkay Distributing Company, Dept. MCS, 28 East Hinsdale Avenue, Hinsdale, IL 60521, has "Tuff-Tride Treated" 72 pitch 10 tooth pinion gears for 25 cents, motor springs in light, medium and heavy pressure, at 25 cents per pair, and a formed wire motor bracket for angle winder chassis that can be used clockwise or counter-clockwise with any 16-D motor. They're ready for immediate shipment. Write directly to the manufacturer.

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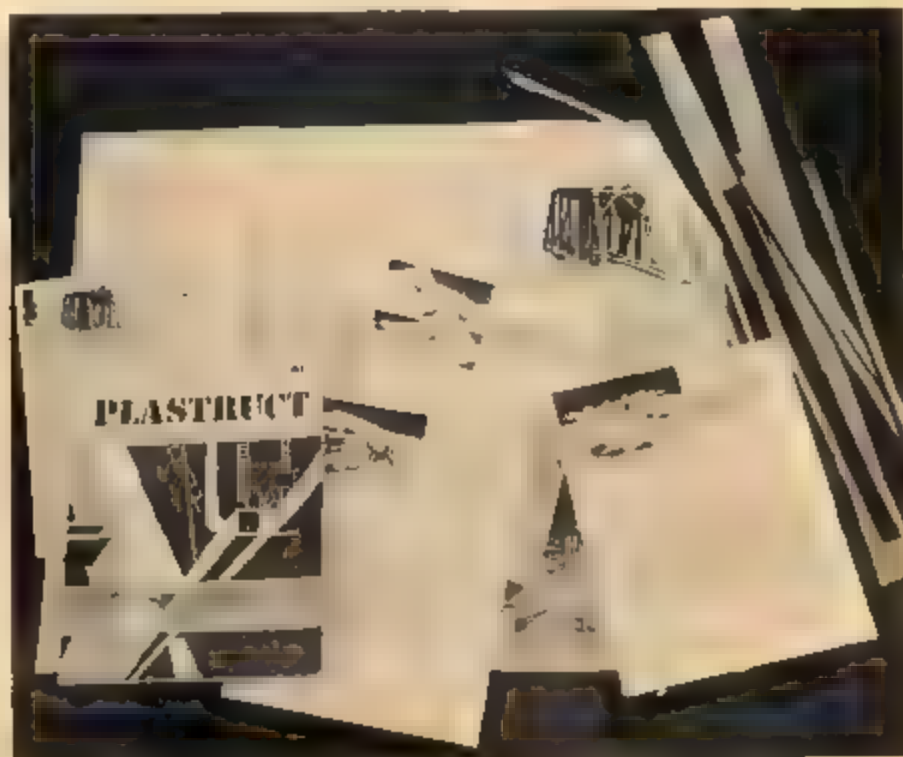
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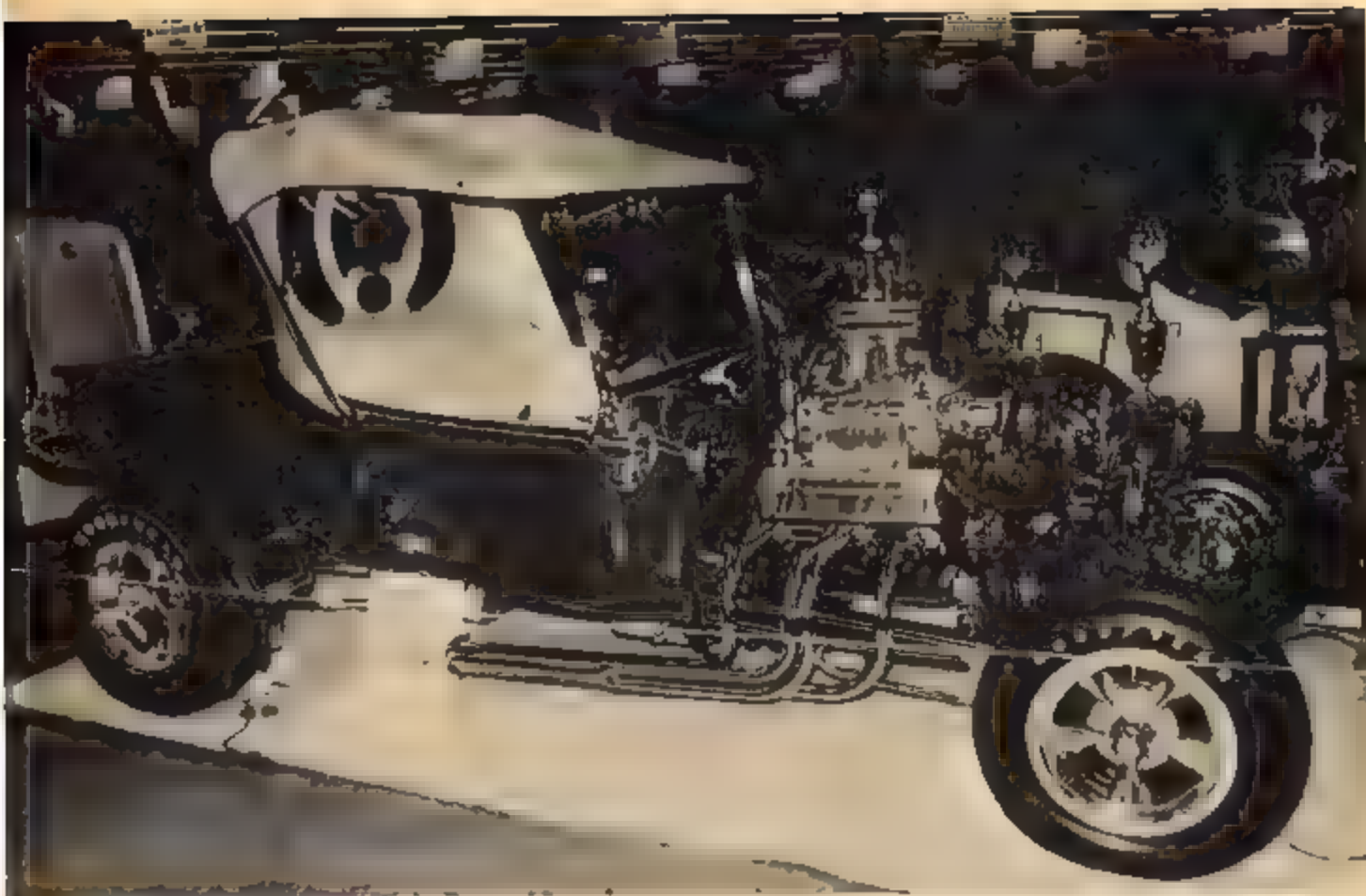
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Andy Brizio's rod as shown at the 1969 Oakland Roadster Show. Fenders, pinstriping, and chromed blower were added after car was displayed in previous shows.

The annual Oakland, California, Roadster Show is the singular showcase for the best and latest in full size rods and customs.

One of the stars of the '69 Oakland show was Andy Brizio's trim "T"-based pickup. The huge GMC blower makes the car a bit of a bagful in the power delivery department, but the car is fully street legal right down to the modified carriage lamp tail lights and sealed beam headlights.

Unusual for some rods, the car sports stopping power with both front and rear brakes. Suspension is by coil springs at the rear and a single leaf at the front with telescopic shocks all around.

The dark blue body gives visual contrast to the pure white top and upholstery with brass carriage lamps, headlight shells, and radiator header tank. The most distinctive feature of this particular rod—and all rods have at least one point of distinction to be show-stoppers—is its back window. The window opening is cut in the outline of the car's carriage lamps with

By Robert Schuchter

BUILD THE "OAKLAND ROADSTER"

A typical, yet unique, rod in 1/24 scale, using Monogram parts.

half moon segments on each side of the "lamp."

When the car was first shown it was sans rear fenders and with a painted blower like our model. At the time of the Oakland show, builder Brizio had chromed the blower scoop, added sheet rear fenders, and white pinstriping.

The basis for our 1/24 scale model is Monogram's Little "T" kit, with mag wheels from their D-I Coffin kit, and the supercharger from the Sizzler Dragster.

The Little "T" is such a "typical" rod that you could use it to model just about any full-size roadster you wish. An optional "T" turtledeck and an

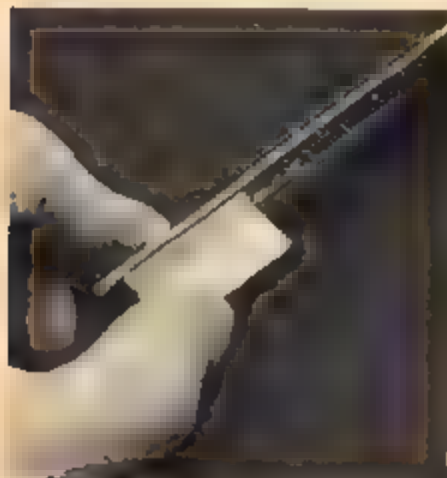
oval gas tank are included in the kit along with the pickup bed.

We modeled the original "fenderless" version of the Brizio rod, but the fenders are simple shaped sheet that you could quickly bend from sheet styrene or even well-sealed postcard stock. The only "trick" part of this model is the unusual rear window cutout (ours is a mirror image of the real car's). If you allow the filler piece that covers the stock window at least three days to dry before cutting the new shape, you should have no problem.

It's a fun car to build and one you're not likely to find on any "stock kit builder's" shelf.



Authentic duplicate of Andy Brizio's roadster can be adapted from Monogram's Little "T" body/chassis/engine, Sizzler blower, and Lil' Coffin wheels, trim.



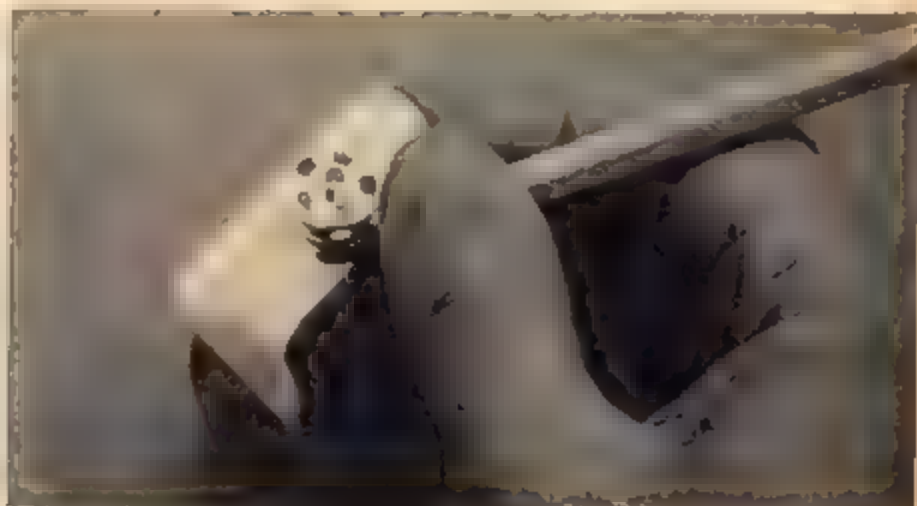
Side trim panels from Lil' Coffin can be adapted to make "T" bonch seat. Trim edge from one panel for vertical front of seat; use other full panel for seat top.



Stock "T" top rear window must be filled in and reshaped to match real car. Trace window on Lil' Coffin roof interior panel, cut out, and glue in "T" top.



Allow glued in window filler three days to dry, then file filler flush with both outside and inside of "T" top.



The Lil' Coffin wheel is about the right radius to match the inner edges of the half moons in Brizio's top. Trace its shape to give you a starting point.



Using photos and traced radius of wheel as a guide, sketch outline of the carriage lamp and half moons. Drill out part of material inside lines and file to final shape with round and half-round jeweler's files. Smooth burrs on edges.



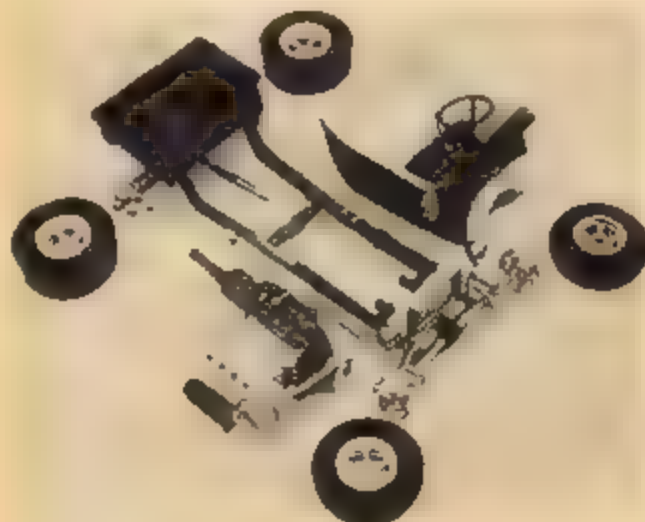
Spray paint the now-modified "T" top with several mist coats of Testor's flat white to give top the powdery appearance of cloth.



Frame and pickup bed can be assembled. Body, frame, and scoop were sprayed with silver undercoat, then six coats of Testor's No. 57 Transparent Blue enamel.



Center holes in Li'l Coffin rear wheels must be enlarged to fit "T" axle. "T" axle ends are shortened $1/16$ " to fit wheels.

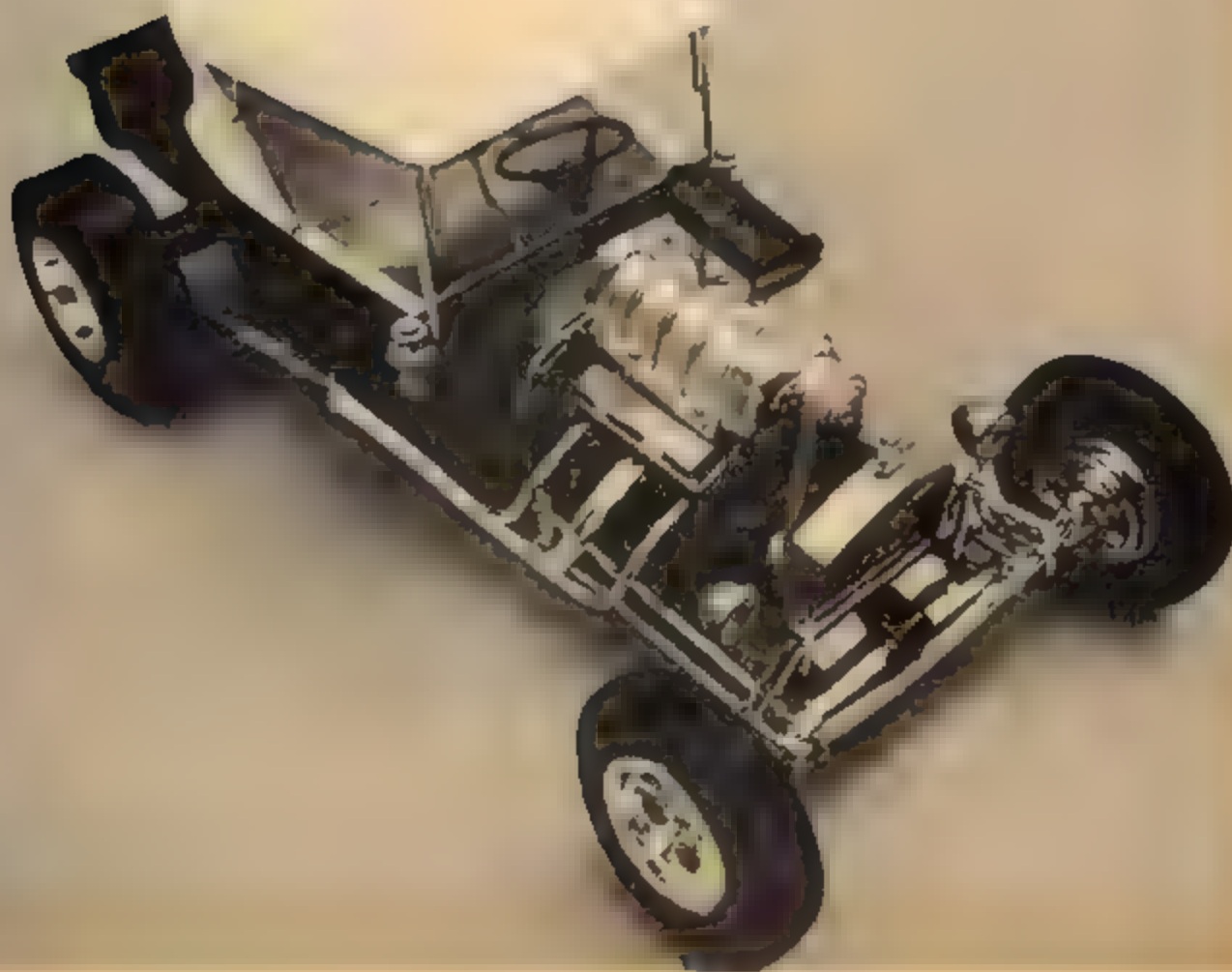
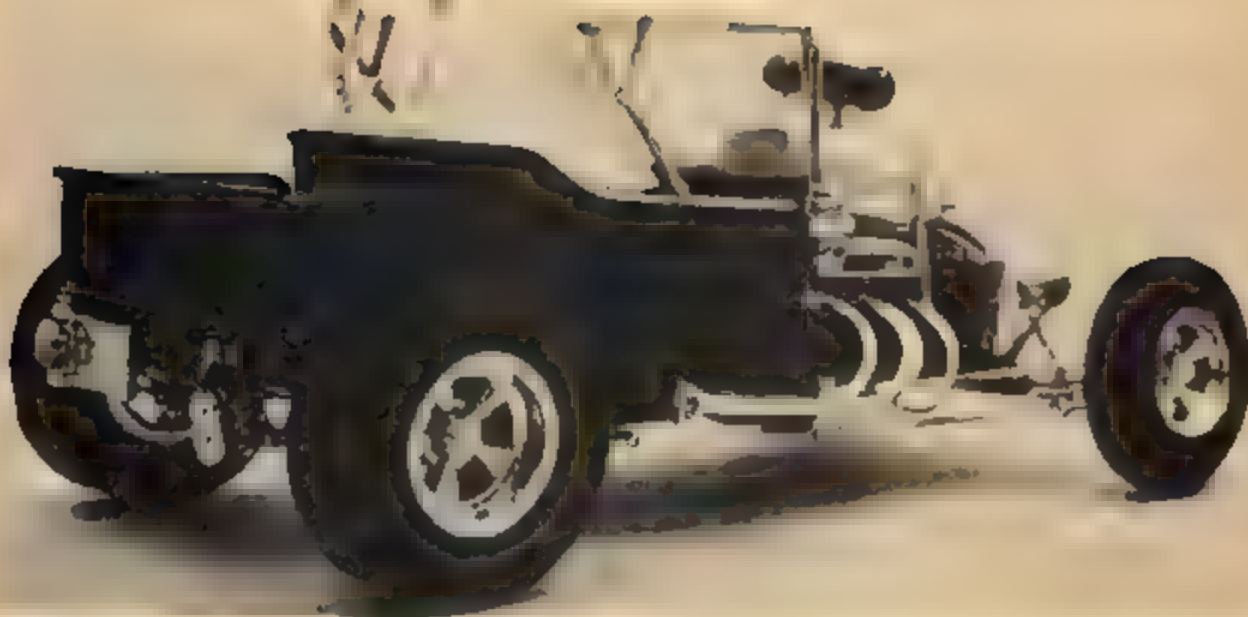


Car is stock Monogram Little "T" with exception of Li'l Coffin wheels and Sizzler kit supercharger.

18/Model Car Science



Detail touches like carriage lamp, turn, and tail lights, front brakes, blower, and carriage lamp/crescent-shaped rear window can add show winning points to both full size cars and models.



A CLUB STORY

It took three months and twenty determined enthusiasts, but the end result was this beautiful club track.

Five years ago, a number of people who had Scalextrix home sets had the idea of combining all their sets to make up larger tracks and race against one another. Once a week they came together using everyone's lounge in rotation. Furniture was removed and various racing circuits were copies or new designs created.

It was great fun but could not last too long, of course. Housewives were getting tired of having their furniture shunted around and their polished floors scratched by the shoes of sometimes 20 or more people. Another solution had to be, and was, found. We approached a local hotel for weekly use of one of their private lounges, which was granted, and the game continued.

One fine day the idea was born to form a club, charge entry and membership fees, and from the funds so gathered, buy track sections for a permanent layout. Enthusiastically, the idea was received, and so M.M.R.C. Vanderbijl was born. Fees were high in those days but slowly the club acquired track section after track section to make up the track design agreed upon by all members. So we continued for months, still crawling on the floor, building and dismantling the course every week.

Our persistence and enthusiasm must have touched the manager of the hotel, for one day he told us that he would clear out an old storeroom which he would give to us for our exclusive use. It was one of the brightest days in our history.

Now a frame and baseboard was built and the track laid. We continued for quite some time until the hotel changed its manager. About two months after the new manager took over we had to leave the storeroom and move into one of the outside garages. Space was more than limited and the place was always dusty and dirty. When, at the end of the first month he charged us a ridiculous amount for rent, the search for other premises became frantic. But to find a large room in a young and growing town is not at all easy, especially if the rent one could afford to pay is very little.

We eventually found a building which was meant to be a Skittle Alley, but the alley was never put in and was used as a storeroom. The rent was high for our standards and so fees went up again.

To gain some publicity, we decided to organize an enduro, to which we wanted to invite three good teams, one from Johannesburg, one from Eastern Transvaal, and one from the Orange Free State. On our premises, we could hardly accommodate our visitors, let alone any spectators. So, other premu-



This South African club consists of 40 active members. Competition, to say the least, is keen.



There's a fantastic feeling of pride when you finally get to run on a club track that you (and your fellow racers) labored over. After the building comes the fun part — racing?



An efficient control center is used on this 1/32 scale club track. Three months of labor went into this particular layout

ses had to be found for this event. A car dealer in town had just opened up and he, as well, was looking for publicity and that was the reason why he permitted us to use his showroom. The event was then duly advertised and turned out to be an outstanding success, in more than one. Two of the visiting teams beat us hollow and, at the same time gave us ideas on how to build competitive cars. Secondly, the Dealer had so many visitors who told him that they would not have known he was in existence if they had not come to see our enduro, that he offered us part of his showroom for our club nights, free of charge.

From then on we really went to town. We organized competitions whenever possible, charging only very small entry fees. But funds grew steadily and when we thought we had a good financial start for a new track we started building. The design of the new track was not easy. It had to be sturdy, portable and small enough to be housed in a private garage, should it be necessary one day. It also had to conform to the standards of the South African Slot Car Association, because we were now ambitious enough that we wanted to organize national events.

You will get an idea of the design from the pictures attached. It is a four lane setup with 85 feet to the lap, three inch slot centers on a table 6 ft x 22 ft. The frame was made from angle iron and piping and can be split in halves. On top of the steel frame, 3/4" thick chipboard was glue and screwed, and on top of the chipboard, again 1/4" thick hardboard. Jigs were made to use an electric hand drill as a routing tool and 1/2" wide x 3/16" deep grooves were then milled, a tedious and long job. Then 3/16" square brass which we used as conductor rails was bent to suit the grooves and then drilled and countersunk. Of course we made bending rollers and a drill jig. The rails were then laid in the grooves, kept apart by 1/8" brass rods. Now we drilled through the rails and through the chipboard and hardboard and the rails were fixed by 8BA countersunk bolts, each with washer and nut under the chipboard. For sections where not through bolts could be used, such as the flyover, brass wood screws were used instead. All-in-all, we used 3,500 Oak bolts, nuts and washers and two gross of wood screws. Then the surface was sanded to a smooth finish. For painting we used epoxy paints, a primer, a second coat in green, and the running surface with a third coat of black, always sanding between coats. For lap counters we use the indicator solenoids of the old beetle (Volkswagen), connected to counters, and they work fine with virtually no maintenance. The whole job took us three months with a few of us working every spare hour possible.

Today we are a very active club with a Senior and a Junior section, of approximately 20 members in each section.

WRINKLES AND WHEELIES

It's tending to the fine details that wins contest points



Extra detail touches can turn a common shelf model into a one-of-a-kind attention grabber. Many Modelers concentrate their efforts on fully wired engines, neglecting some of the more obvious details that can make any model car kit just a bit more authentic.

Wheels are such obvious attention points that it is easy to forget how much they add to any car's appearance.

Wheel detail can quickly make your model a show stopper. On a custom car or a show rod, you have a bit less that can be done than on an out-and-out racer. Yet the valve stem, mag-like finish, and lettered tire sidewalls have just as much (if not more) of a place on a show car. The simulated, anti-creep, tire locking screws, and the wrinkled tire sidewalls of a dragster just off the line add an action touch to a shelf model racing car. For an additional eye-grabber, the front end of the car can be elevated in an off-the-line "wheelie."

The two cars in the photos are box stock examples of Revell's newest 1/24 scale kit, the 51 Henry J Drag Coupe. The tires and wheels in this particular kit are excellent. The wheels are offset American Mags for both front and rear. The front tires are correctly scaled Goodyear Sports Car Specials. The rears are giant Goodyear Blue Streak Dragway Stock, with 3 full eleven scale inches of rubber on the ground.

The kit instructions even include a short treatise on the correct lettering and numbering systems for a drag racing machine of the Henry J's ilk (the letters on the two cars in the pics are NOT correct). Most of the Henry J's run in A, AA, B, or BB Gas Supercharged classes.

Getting just enough heat to properly melt the tires for that off-the-line wrinkled sidewall effect may take a bit of practice. You'd best experiment a bit with the "X" shaped molding trees, or spruss, from the kit before actually applying heat to the tires. Above all, don't allow the tire to get so hot that it melts your fingers. Better to use a candle for heat than a stove burner.

By Robert Schlicher



Tire and wheel detailing "tools" include toy "Pickup Sticks" (from the game), .025" steel piano wire, flat white paint, DullCote, No. 56 and No. 72 drill bits.



Pour off the thinner from the white paint BEFORE shaking bottle. Thicker paint makes lettering of tire sidewalls with a No. 00 brush far easier. "Good year" letters are done with brush tip, other lettering by just touching letters with side of paint-wetted brush hairs.



To duplicate the wrinkled look of a drag racer's tires "off the line," soften the assembled plastic tire over a candle flame. Heat side first, then edges.



While tire is still heat-softened, press it gently against a flat piece of scrap metal or glass and rotate tire slightly.



Two extremes of "wrinkled" tires
Tire on left has been barely softened.
Tire on right would have very low air
pressure to distort so badly, but both
effects are found in action photos of
real drag racers.



To detail wheels, trim away the traces
of the molding "tree" to exactly
match the radius of the wheel edge



Drill a No. 56 (3/64") hole through
the edge of the wheel rim and insert
one end of a plastic "Pickup Sticks"
game stick.



Apply a drop of glue to hold the end
of the "Pickup Stick" in place, trim
off the excess stick even with the
wheel's outer edge, paint flat black



Low tire inflation on full-size cars
forces builder to attach tire bead to
the wheel with screws through the
wheel rim into the tire. You can
simulate the screw heads by just dimpling
the wheel rim with the No. 56
drill about nine times.



Four super detailed wheels and tires
ready to mount. Wheels were sprayed
with a coat of Testor's DullCote to
give more of an aluminum/mag look.



To provide an inconspicuous "stand" to display car in "wheelie" position drill a No. 72 hole in some hollow of engine underside (between pan and bell housing).

Cut a piece of .025" steel piano wire (obtainable at model aircraft shops) just long enough to lift the front wheels about $\frac{1}{4}$ " off the ground. Wire is then inserted in the No. 72 size hole



Wire supporting front end of car for "wheelie" display is just barely visible behind right front wheel.



Revell '51 Henry J Drag Coupe kit includes opening hood/fender panel and hinged doors with decal assortment.



One color, gold metalflake paint scheme and flat aluminum blower scoop offer one of many alternates to two-tone and stripe colors shown on box.



Our pair of Henry J Drag Coupes leave the line in a match race, with white car popping an instant wheelie to "hole shoot" its competitor.



THE BIGGEST CONTEST YET!

Setting up the big one! Left to right: Walter Caddell, Executive Director, H.I.A.A.; Milt Grey, President, H.I.A.A., Steven Urette, Publisher, Argus Publications, Lee Rhyler, outgoing President, H.I.A.A.

Stand by for action! *Model Car Science* has teamed up with the Hobby Industry Association of America, the "brains" of the history of Modeldom!

At the close of the 32nd Annual Convention of the Association, the program, which was six months in the planning stage, was announced by Mr. Kenneth Rathke, chairman of the Plastic Model Kit division of the H.I.A.A.

Presentation of the program was made by Henry Blankfort, president of the Blankfort Group, public relations consultants to the H.I.A.A. Blankfort mentioned the fantastic success of past contest, sponsored by individual manufacturers. He also said that the sponsorship of this new contest by MCS/HIAA should bring even more spectacular results.

Steve Urette, publisher of the co-sponsoring *Argus* magazines, said his company's participation could be considered as "thanking the model kit industry in practical action" for its advertising support throughout the years.

Magazines published by *Argus* reach the entire age group of auto enthusiasts with their combined multi-million circulation. Urette said that the contest will be strongly featured in all of the publications including *Model Car Science*, *Popular Hot Rodding*, a magazine devoted to full-size performance cars, *Motorcade*, for Detroit car enthusiasts, *1001 Custom Car Ideas*, reaching the full-size

car customizer, and its *Engine Annual*, devoted to the motor minded.

The model manufacturers backed the idea with enthusiasm. Mr. Rathke, of Lindberg Products, William Lester, Pyro Plastics, Richard Mates, Hawk, and Lou Wetzel, Renwal, present at the meeting, pledged financial support to the campaign.

Within hours, every other car model kit manufacturer who had been contacted, AMT, Aurora, Monogram, MPC, Testor and Revell, confirmed their unqualified support, with others to be announced later.

At the Publications meeting, Steve Urette welcomed the quickly-offered cooperation of Bob MacLeod, publisher of *Car Model Magazine*, to promote the contest. Urette anticipates the same cooperation from other model car and auto enthusiast publications.

The contest, which will be judged on photographs of the entries, will start August 15, 1969 and run for three months until November 15th.

A list of exceptional prizes will be announced in early June. The contest should be the most exciting ever offered in a hobby industry contest.

Stay tuned for more news on this exciting contest. We'll give you the full scoop in next month's issue of MCS. You won't want to miss *this* contest.

You don't need expensive equipment
to take good pictures!

HOW TO PHOTOGRAPH YOUR MODEL

Is there anyone who has experienced the thrill and satisfaction of a beautifully completed model who has not wished its perfect state could be preserved? Many are those who have attempted to suspend that "moment of perfection" on the glossy surface of a photograph. Almost as many have been disappointed when their efforts were returned and they found their masterpiece appeared as a small speck in the center of the picture. The surroundings of the model seemed to have taken over and reduced the real center of attraction to insignificance. Or perhaps the camera was moved close enough to the model to fill up the picture but disappointment still triumphed with the photographic recording of a blurry mess.

If you're inclined to preserve the brilliance of your handiwork with a photograph, you don't have to put up with these disappointments. In fact, you can take pictures of models with ease and with hardly more than the minimum equipment. A box camera or an inexpensive Instamatic type camera such as can be found in almost any household is adequate for the job.

The secret of taking good pictures of models is to get close to the subject. However, the usual simple camera (one that is not adjustable) will usually not focus on any object closer than six feet away. Anything closer will be blurred. The Hawkeye Instamatic, for example, will not take pictures at closer than four feet. Yet, a picture taken at that distance make the model look like it's about a block away.

So how do you get close? A portrait or close-up lens is the answer to the problem. Close-up lenses are mounted on the camera in front of the regular lens. The purpose of close-up lenses is to bring the area which is in focus closer to the camera. The closer the camera to the model the more the model will fill the picture from one margin to the other.

That's great! but you really want to spend your spare cash on models and not on expensive photographic equipment, right? OK, but would you go a couple bucks on the lens and a couple more on the holder to attach the lens to the camera? What, you don't have a camera? The Brownie box camera shown in the accompanying photograph was purchased at a Salvation Army store for 25 cents. Reasonable enough?

How can you get these lenses? Take your camera with you to the nearest photography shop to find out what size filter holder will be required. The filter holder is needed to mount the lens on the camera. Only one is needed and it will accommodate lenses of many different strengths.

The second step is the selection of the close-up lens which will make the model appear close. The different strengths of close-up lenses that will be considered here are designated from +1 to +10. A table is supplied with the

purchase of each close-up lens. The distance from the camera to the new point where the model will be in focus can be determined in the table from the setting of the camera. This applies for adjustable as well as box type cameras.

Your photo shop can tell you the distance your fixed focus camera is set at if you don't already know. A camera with a fixed focus of 15 feet would have an actual point focus at 32-3/8 inches with the attachment of a +1 lens. At this distance the picture would show an area in focus which would be about 26 inches wide. At 1/25 scale model may be eight or ten inches long so with this lens the model would only take up a third or less of the width of the picture. If you want to fill the picture with a model that is nine or ten inches long, a +3 lens will be just right. With a +3 lens the model will be in focus at 12-1/4 inches from the close-up lens. The lenses from +4 to +10 will allow decreasing distances from the model to camera down to 3-1/2 inches. At this close distance the width of the area which is in focus is only about 2 1/2 inches. The selection of a close-up lens depends on the size of the models you want to photograph and the distance at which your camera is focused. A +3 lens is recommended for the majority of fixed focus cameras. It will allow you to take 1/25 scale but will allow you to get close enough to the smaller scale models to record good detail.

If the purchase of more than one close-up lens is contemplated be sure to consider the fact that they can be added together. For instance, if a +3 lens and a +1 lens are both mounted together in front of the regular lens, the combination will produce the same results as the use of a +4 lens.

In the event your drugstore or photo shop does not stock filter holders and close-up lenses, write Spiratone Inc., 130 W. 31st Street, New York, N.Y. 10001.

In using the close-up lenses it must be remembered that unless the scene is viewed thru the camera lens itself there will be a slightly different angle thru the viewfinder. In other words, if the viewfinder is directly above the camera lens it will show the scene to be slightly higher than the actual scene as seen by the film. This would tend to cut off the top of the scene as seen thru the viewfinder. This difference in views between viewfinder and film is called parallax. It is especially important to consider when taking close-ups. To compensate for parallax, arrange the model in the viewfinder. The camera can then be moved so the camera lens is in the same position the viewfinder previously held. In many cases a book or board or anything handy can be used to prop the camera up to the proper position.

Successful pictures at this close range also require an understanding, on your part, of the narrow band of focus. The closer the camera is to the model the narrower the band of focus. If the camera is used without the close-up lens and it is focused at 15 feet then the band of focus will be from about 6 feet to infinity. However, if a +3 lens is attached to this same camera, the close-up distance from camera to model is read from the table as 12-1/4 inches and only that area from about 12 inches to 12-1/2 inches will be in focus. The part of the model you want to show most clearly must be within this narrow band of focus. Any point closer than 12 inches or farther than 12-1/2 inches will be blurred.

Take a number of pictures at slightly different distances and record the measurements as you go along. Match this information with the prints you get back and you will be able to judge the exact distance you should place your camera for greatest sharpness.

The next time you build a model and arrive at that "moment of perfection" why not capture it on film? Lack of expensive equipment is no longer an excuse for not taking pictures.

By Jim Brewer



With the attachment of a close-up lens, even an old Brownie box camera can produce excellent pictures of models. A Series V filter holder is used for mounting lens on the camera.



The only equipment required for the photo in (2) was a box camera with a close-up lens, card table and a book. Green colored construction paper was placed under the model to simulate pavement.



The clarity of detail in this photograph compares favorably with the results obtained from expensive cameras. Note that everything beyond the model is completely out of focus.



The model appears too far away and details are not discernable. Without close-up lens the camera (Hawkeye Instamatic) could not be brought closer than four feet from the model.

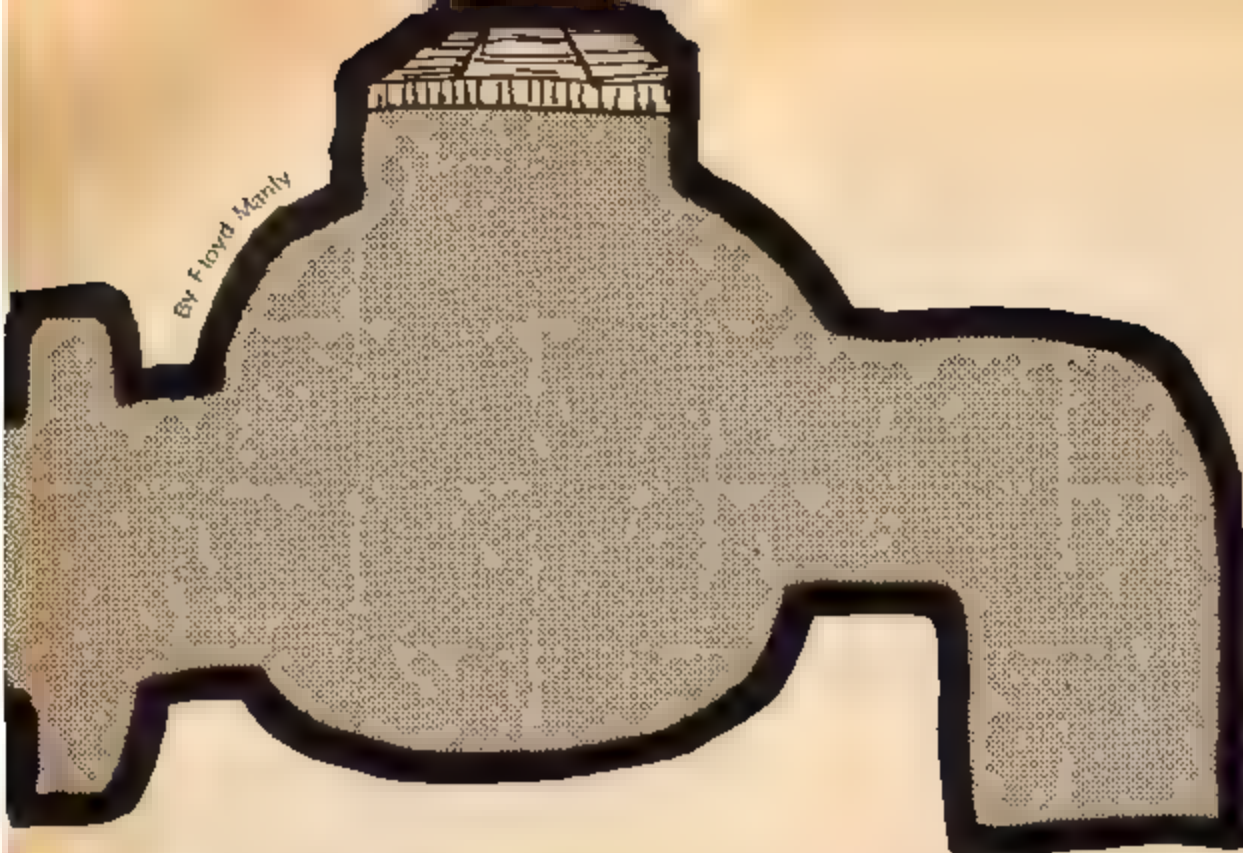


For a camera with a fixed focus of 15 feet, measure exactly 12-1/4 inches from model to a +3 close-up lens. Only a small band on either side of 12-1/4 inches will be in sharp focus.



1/25 scale Mercedes-Benz was taken with a Hawkeye Instamatic — the same camera as used for (4) but with a +3 close-up lens attached.

By Floyd Manly



No indeed! It's a plumber's delight!

A "plumber" rigged chassis has been nicknamed that because at first glance all the extra rods and rigging look like a Rube Goldberg plumber's nightmare.

Actually it's not that complicated and the simplicity of design of Champion's angle-winder chassis makes it about an hour's work to modify. If you don't do it, you're gonna be beat by guys who have, and you'll wish you did.

The plumbing is especially beneficial on tracks that have severe "launching ramps" (humps) and sharp corners at the end of fast straights.

PLUMBER'S
NIGHTMARE?



Unsolder the "batpan" hinge tubes from the side rails and the cross bar from the top of the drop-arm hinge tubes. Clean away the old solder and "gold" plating and save everything! We'll use it all.

28/Model Car Science



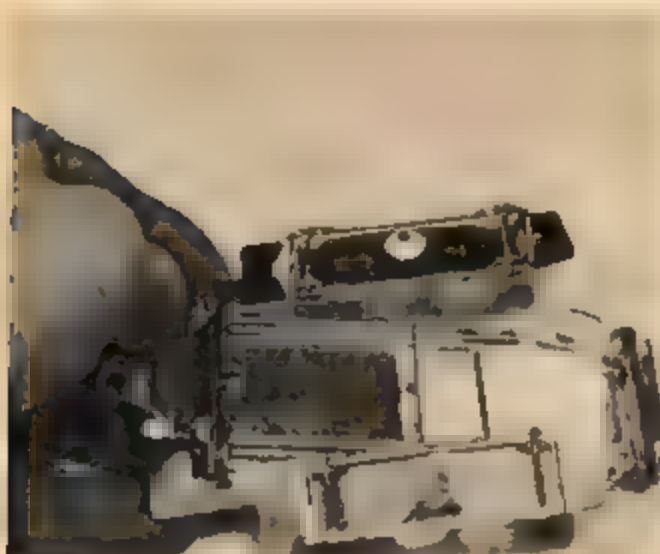
Unsolder the cross rod that acts like an "up stop" for the drop arm and replace with a piece of 3/32" tubing. Now's a good time to check the frame to see if all four wheels touch.



Insert a 12" section of 1/16" brass rod and bend as shown so each end is parallel and long enough to reach back to the motor bracket. These are the plumber rails.



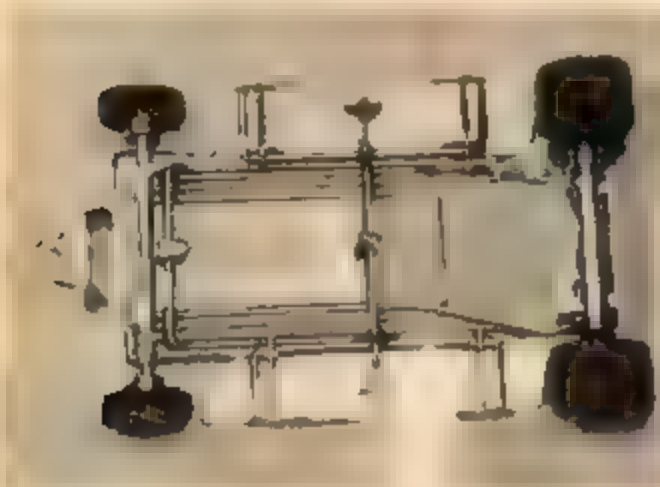
Carefully bend each plumber rail so they lay close to the other rails and flat on the track.



Place the bat pans back in their original location and solder the hinge tubes to the plumber rails.



Place the cross bar back in its original position after moving the damper spring to the inside of the limit flange. Solder to the bat pan hinge tubes, but not to the drop-arm hinge tube.



The cross bar acts as a down-drop limiter so all we need is an up stop. Cut and bend two small piece of that crossrod you removed from up front into an "L." Solder it to the drop-arm hinge tube.



Add a drop arm depressor to each bat pan as shown. When the body tilts in the corners, or flops up in the humps, these will keep the pickup shoe in the slot. You now have a full plumber's rig just, like the pros. Simple, wasn't it?

If you've ever wondered just how fast your home-set cars really are, here's your chance to find out, and for less than \$4! You can convert ANY brand of 1/32 scale home set car into a Bonneville streamliner.

Hawk makes four different streamlined bodies that will just fit 1/32 scale chassis. The Hawk cars are all plastic, designed to be driven by rubber band power, but they are extra easy to adapt to a motorized slot car chassis. You, and the other members of your club or racing group, can try this new type of racing against the clock with the bare minimum of extra expense. Just limit any car modifications to wheel, tire, gear, and body changes. It'll give you a chance to see just how much speed you can extract from your car through careful bearing and gear adjustment, alignment, and light.

The basic idea behind any quest for ultimate speed is to allow the available power to be used to its maximum. In a model car, the bearings must be oiled and perfectly smooth, the tire contact area reduced to a bare minimum, and the gear ratio reduced from a usual stock 4:1 or so to somewhere between 2:1 and 3:1. A streamlined and low body will also help. The photos and captions show you how to fit new wheels, tires, and gears to the popular Revell home set car chassis. The same steps will adapt these parts to Monogram, Eldon, Strombecker, MRC/Scalextric, or any other brand of 1/32 scale set car. The Hawk body's center section is just the right height to

mount right on the top of the motor with epoxy or contact cement.

You can combine a number of standard home set track straight sections to form the speedway for these "land speed record" cars. Several friends can help by loaning their track sections for the day's runs. It is best to use the same brand of track, but if different brands are all you can collect, take a look at the November 1958 MCS to see how to combine them. The straight should be a minimum of twenty feet long to give the cars time to accelerate. A pile of rags at the "bitter end" of the straight can serve to slow and stop the cars there. Unless you have a giant basement room, the LSR speed runs are best held outside. The first five feet of the straight can be elevated a few feet to give the cars a downhill start, minimizing the length of acceleration straight needed. A photo-electric, computerized timer is the best device to accurately time the top speed runs of the cars, but who, outside of the Bonneville officials, has access to such expensive equipment? A pair of stop watches, and some math will have to do the job for most of us.

Mark a line across the width of the track surface nine feet, 3/4 inch from the far end of the track and another five feet from the same end. The length of track between these lines will be the "timing trap." You can mark the lines with white paint. The amount of time it takes for the speeding car to pass across this four foot, 3/4 inch timing trap will allow you to determine its speed. This distance is equal to 1/40 of a 1/32 SCALE mile. It'll take two guys, each with a "zeroed" stop watch, to record the car's times. Each

watch-holder should concentrate his vision on the line just in front of him. Both watch-holders start their watches at EXACTLY the same moment (a few seconds before a car is ready to start its run). Double check the movement of the running watches to be sure both are absolutely in synchronization with one another. Restart both watches from zero until the recording hands of each watch pass the watch's timing marks at the exact same moment. The guys holding the watches will punch the watches' stop buttons the exact moment a car passes over the timing trap line just in front of them. The time recorded on the watch nearest the starting end of the track is subtracted from the reading on the watch at the line closest to the far end of the track. The difference in recorded times is how long it took the car to pass through the distance between the timing trap lines.

If the watch-holders have trouble determining just when the cars pass over the timing trap lines, cut a narrow slit in a large piece of cardboard. Have the people holding the watches look through the slit at the line, with the cardboard blocking off their view of any other part of the track. This will merely help them to concentrate on the line to make it easier to tell when a car actually crosses the line.

With the four foot, 3/4 inch long timing trap equal to 1/40 of a 1/32 scale mile, you can use simple math to convert the seconds recorded by the stop watch to hours and both figures into 1/32 scale miles per hour. If, for example (and assuming MY math is correct) it takes a car 3/10's of a second to travel the four foot, 3/4 inch distance between the timing trap

lines, the car is speeding along at a 1/32 scale 300 miles per hour! You can use actual miles per hour, feet per second, or whatever to record the times if you want to avoid the math. You'll have the comparative times it took for each entrant's car to travel through the timing trap, proving, at least, which car is faster than the other.

You'll find driving these high-g geared and low traction cars a real challenge. It is doubtful that the cars will have enough length of straight, in 20 feet, to allow the motors to "peak out" to their maximum revs. A longer straight leading to the timing trap is best—30 or 40 feet would probably do. Elevating the start, to give a downhill ramp effect, is a cheaper solution—just so you don't elevate so much of the straight that the cars become more coasters than powered machines.

A bit of experimentation in driving and gearing the cars will tell you the best techniques for obtaining maximum speed.

THE

By Robert Schlie, Jr.

"BONNEVILLE BULLET"

You can own the land speed record!





Remove the stock home set wheels, tires, axles, and crown gear. AJ's No. FL 49 cents pr. wheels and tires offer minimum rolling resistance. Use 2-1/8" 5-40 threaded axles, 29 tooth crown gear with 9, 10, and 12 tooth alternate pinion gears.



Remove motor from chassis. On Revell's newest home set cars, a black nylon U-bracket must be pried loose first.



Use a gear puller to remove stock eight tooth pinion gear. Nine, ten, or twelve tooth pinion can be pressed on motor in a vise.



1/8" axle spacers will be required to space AJ's wheels out from frame to ends of axles. Adjust for minimum side play and tighten lock nut against wheel back.



Hawk's 60 cents Bonneville racer kits make conversion of any home set car into a land speed record racer. Add low rolling resistance wheels and tires, axles, and new gears.

Place spacer washers INSIDE frame rails at rear to obtain and maintain proper gear adjustment, tighten gear's set screw



AJ's tires are too small to provide enough ground clearance on Revell or Eldon cars (they're OK on other brands of home set cars). Pull tires off wheels.



Monogram No. SR1004, 13/16" diameter tires can be glued on the AJ's wheels, with only edge of tire contacting track. Spin wheel before glue dries and align tire.



All four of Hawk's "Bonneville" series bodies utilize the same outer body shell. Center cross brace can be epoxied right on top of motor. Check tire clearance.

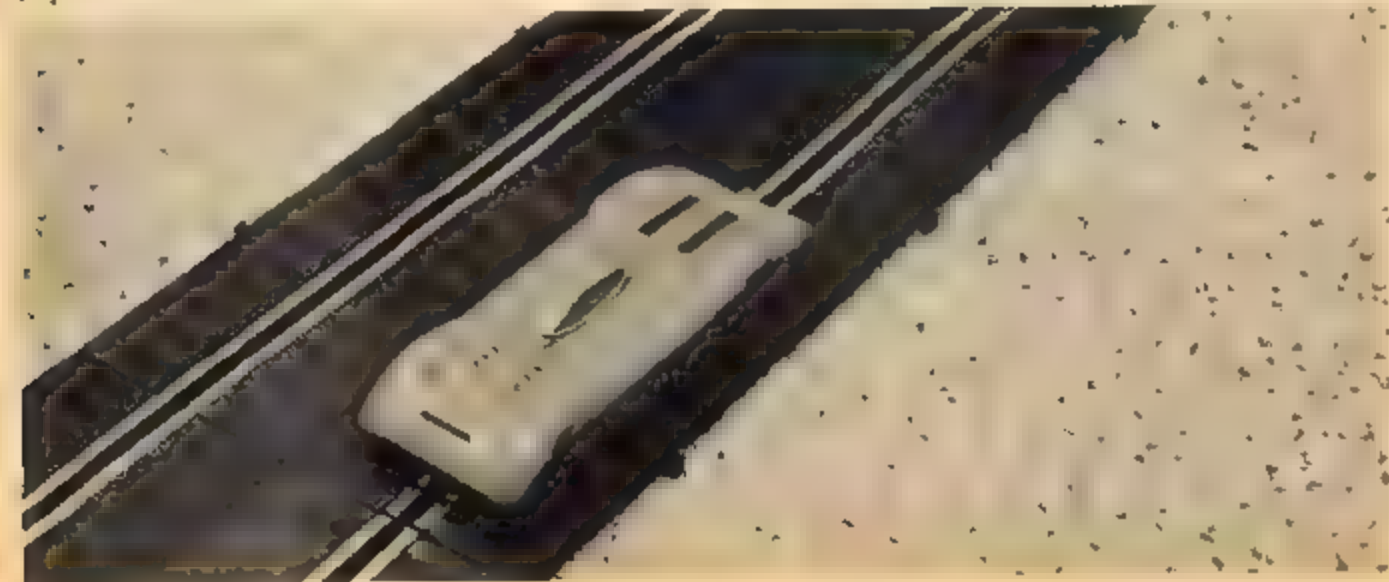


Trim off molding lugs from right side of body, sand, prime paint, and apply final body color.

Club members can combine straight sections from several home sets to obtain the longest possible straightaway. Text outlines procedure for setting up and timing high speed streamliner's "record" runs down speedway strip.



Center section of Hawk's "Bonneville" bodies is available in four different styles: the "Bonnie Buggy" (shown), the "Dyna-Moe," the "Turbo-Go," or the "Alky-Saltzer." Decals are included in each. With body epoxy-mounted to top of motor, rear tires just clear inner sides of the body. Body is typical of many different cars that have appeared at Bonneville.



MODEL OF THE MONTH CONTEST

HOW TO ENTER OUR CONTEST

You can win a \$25 Savings Bond if you win first place in our contest! Simply send a sharp black and white photo (no color, please) of your favorite model car, along with a description of what you've done to it. Be specific when mentioning the parts you used, as other readers are interested. Send your photo and description to "Brick" Price, Contest Editor, 11795 Gateway Blvd., # 3, Los Angeles 84, California 90064. Sorry, no prizes for other than first place, except the pride you'll feel when you see your car in the pages of MCS.

This month's winner tied with himself for first place honors and a \$25.00 Savings Bond! Harlan Tiesman of 1126 8th Ave., Fulton, Illinois, built the two cars shown as exact replicas of factory experimental cars belonging to Arnie "The Farmer" Beswick. The '63 Tempest "Tiger" was built from two AMT Tempest sunny car kits. The front end and wheel openings were moved forward a scale eight inches. A major portion of the frame and interior was scratch built. The suspension works and has a scale six inches of travel. The engine is Revell's 421 inch Pontiac modified with working butterflies, wiring, and fuel lines. The car was sprayed with Pla orange enamel and completely hand lettered with the exception of two Pennzoil decals.

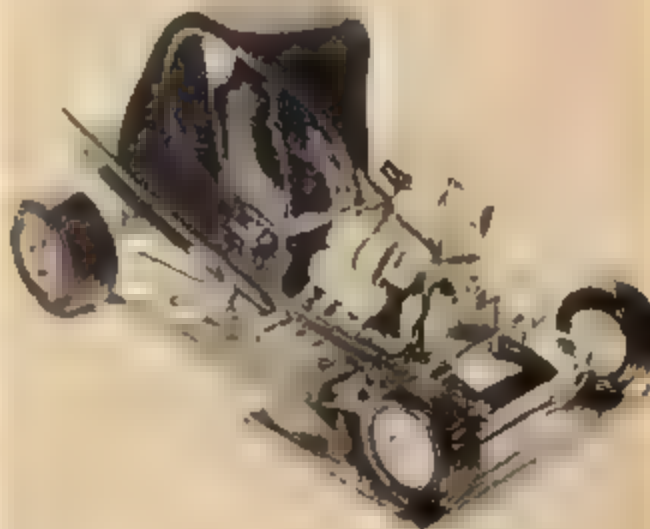
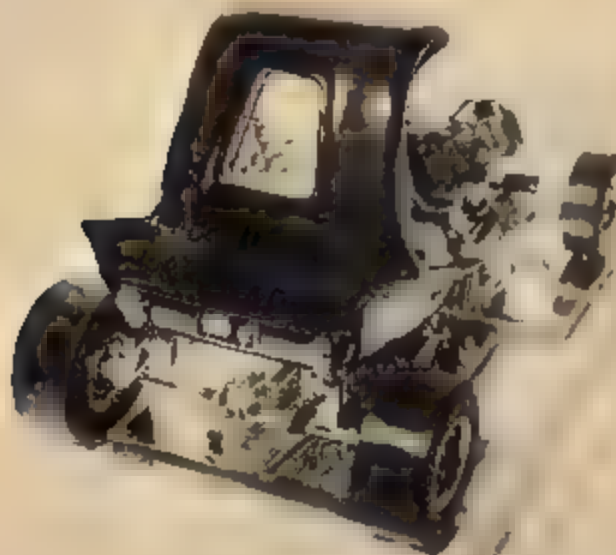
The GTD had to be built from MPC's '67 modified to look like the '66 model. The hood scoop was removed, a spoiler added to the rear deck and front wheel wells moved forward a scale nine inches. The interior and working suspension was scratch built. It's finished in Pla yellow with various shades of orange fogged on. Just as on the Tempest, all lettering, including Tiger emblem was done by hand. Magnificent work, Harlan!





Gary Miller of Wichita, Kansas took the front and top of a '40 Willys, the rear of a Ford GT and the sides of a '65 'Vette and moulded them all into one gas of a gasser. He modified a Cobra frame with plastic stock, then added a Camaro "funny" front end and a '36 Ford truck rear end. The Shelby 2.0, h.c. 427 is equipped with full wiring, a 6-71 blower and Weber injection. The interior was made from brushed aluminum while the exterior was finished in antique bronze automotive lacquer. The well detailed garage scene utilizes parts from many kits. Why don't you change the name to "Potpourri," Gary?

"Wud" and "Sanitary" describes Gordon Ross' highly modified "Pie Wagon." The top and rear of the body were formed from balsa. The fully wired, dual-supercharged Chrysler engine was pirated from AMT's '53 Stude kit. What better place for a wild rod to hail from than Motor City?





GM's anti-racing edict hasn't stopped the likes of Chris Geiger of North Merrick, New York. The '67 Camaro has been set up for road racing events, the body lightly de-chromed, and a spoiler molded into the rear deck. The color scheme is a distinctive white body and metallic blue stripes. Super-detailing includes spark plugs, ignition wires, fuel lines, wired alternator, brake lines and working hood lock pins. My kind of car, Chris.



"Ron's Rod" was built by Ron Chaffin of Hamilton, Montana. It started life as Revell's Miss-Deal funny car. It features a strengthened chassis and a Revell Orange Crate body. The gas tank was mounted behind the empty radiator shell. Clean and classic rod styling. Ron.





The "Jester" is what Joe Cheviano of Brooklyn, New York, calls it, but there's nothing funny about this '33 Willys. Joe used the AMT 392-cubic-inch Chrysler engine kit for the potent mill and glued wooden dowels inside the cylinders to simulate pistons. The driver's door was cut open and hung with homemade hinges of plastic and paper clip. Finish is six coats of AMT Lemon-Lime Flake fogged with AMT Fire Orange. Well done, Joe.

3rd MODEL CAR SCIENCE/USRA Road RACE

OR THE KING FALLS!

Somebody finally put a stop to Mike Steube's string of wins, which looked for a while quite impossible. Mike won the first race, as reported in MCS, and then the second race which was for coupes, at Don's Raceway, on the Checkpoint track. He won both of these in such a convincing manner that it made him look unbeatable. But the third race proved that Mike is human after all. Due to a conflict in dates we ended up with two big races on the same weekend. On Saturday we had a big Mura race at Checkerad Flag Raceways in Westminster, where Dave Grant came thru for his first big win. And then our race was run on Sunday at House of Hobbies, 1829 Badillo, West Covina, California.

This is a great track for sports cars, but it's not too well suited for GP's. But then the only track they'll handle on is one that's as smooth as glass and there just aren't any of those around. The straightaway had a slight wash-board effect in it and at least half of the cars launched, ending up on the floor. But the battery power was perfect, not too strong, and yet the No. 24's and D27's ran so cold it was unreal. Just about everyone detuned their motors running No. 25 or No. D28 in an effort to cut their power to keep the G.P.'s on the track. Most of the guys had spent their time getting ready for the Mura race the day before and weren't as well prepared for this race as they normally would have been. John Cukras was one of these. He had about an hour's practice on the track before qualifying. He practiced and broke in the lane he thought qualifying would be on, but then it was changed due to a braid problem. John was the first qualifier and on a different lane, he didn't do as well as he normally does, turning a 5.22. And when I turned a 5.20 to cut John you know something's wrong.

But the man that made the biggest noise in qualifying was Lee Gilbert, who also placed second in Concours. Lee has built quite a name for himself in chassis building, and this time he went one step beyond, using his own low profile motor to set quick time at 5.00. I had run one of my own low profile motors the night before at the Mura race in one of Lee's chassis, and the improvement in handling is fantas-



John Anderson's winning combination consisted of a chassis by Mike Morrissey, horsepower by Pete Zimmerman, front wheels and tires by Rigger and John was the only driver using Dynamic blue tires on the rear.

Everyone else used orange. John also used the new Simco jet flag pickup that almost everyone is now using. They really work. If John can keep getting some good chassis, he'll be hard to beat.

SEMI-MAIN

	NAME	E.T.	LAPS
1.	JOHN CUKRAS	5.22	204
2.	DAVE KIMBALL	5.16	203
3.	JOHN ANDERSON	5.13	202
4.	STEVE BOGUT	5.17	199
5.	RON FIRESTONE	5.27	196
6.	BRUCE ERICKSON	5.11	194
7.	HERB WADE	5.09	190
8.	BILL STEUBE JR.	5.17	187

"A" CONSOLATION

1.	JOHN CUKRAS	5.22	128
2.	RON FIRESTONE	5.27	127
3.	LYNN STOKEY	5.23	126
4.	JACK GARCIA	5.18	124
5.	GIL GUNDERSON	5.40	122
6.	BERNIE ERTRACHTER	5.21	121
7.	MANNY GUZMAN	5.23	118
8.	GENE HUSTING	5.20	117

PHOTOS: A. HALL

tial We had a slight jump on the rest of the guys as the new Mura low profile motors had not yet be released.

Cukras ended up in the "A" consie, but as it worked out it probably helped John as he got some practice this way on the other lanes. He made the moveup out of the consie along with Ron Firestone to the semi. For some reason or other the semi was a complete destruction derby-type race. I don't know when I've seen so many cars off the track so many different times. The "no track call" ruling adds somewhat to this, although it's still the only way to go. It seemed like there was scarcely a full lap run between crashes. Some tracks might have one particularly difficult type corner where most of the crashing occurs, but these cars were off the track everywhere in the esses, in the doughnut, in every corner and even in the straights! The Turn Marshalls really had a workout in the semi. But it enabled Cukras to gain some practice on the other lanes and in the process he won the semi with Dave Kimball, a local jet who had won the amateur main earlier, second, a lap behind John. Another lap back was John Anderson who had done a lot of crashing trying to take the bank a little faster than his car could handle it. Steve Bogut took fourth and the four of them advanced to the main.

The main event started with a complete surprise to almost everyone. We're so used to seeing Mike Steube with all the horsepower that when someone else jets right on by Mike, everybody does a doubletake. But Mike Morrissey had so much horsepower even he couldn't believe it! He was passing cars with such ease it was ridiculous. It looked like he was going

to win this race by at least 20 laps. And to think he almost didn't even race today. Mike had loaned his own car to Bruce Paschal who was here from New Orleans for the weekend. This left Mike without a car so he just came to spectate. He found out Bruce Erickson had one of Mike's chassis in his box that he wasn't going to use, so Mike borrowed it. He then borrowed a jet motor from Pete Zimmerman, painted a body and just made the entry deadline. And here he was leading the main. In the second heat Mike did what seemed impossible. He lost the lead. Just a few too many crashes was all it took and John Anderson took the lead. I guess if somebody had to beat Mike, Mike would have preferred it to be John. You see John was also running a Morrissey chassis and a Zimmerman motor that was just about as fast as Mike's. But apparently John had gotten all the crashes out of his system in the semi because in the main he was driving so well he made the car look like it was glued to the track. And speaking of glue, when Morrissey got to the inside lane somebody had glued the esses so bad his car just came to a complete halt when he hit it. He must have lost 5 laps trying to get thru the stuff. This is about as frustrating a condition as you can get. Especially with Mike Steube in 3rd place just dying to get into 2nd place, and Anderson increasing his lead to over 12 laps. Anderson never did seem to run into any difficulty and steadily increased his lead to make it a rout by 15 laps. Morrissey, with all his problems, still showed how the old pro does it by taking 2nd place with some last minute driving skill by 2 laps over Mike Steube. Steube just held off Cukras by one lap. Cukras in turn was

just one lap ahead of Bogut who in turn was just one lap ahead of Jackson. Fantastically close racing for over 400 laps. And with this kind of competition, Anderson still managed to run away with a 15 lap lead! Thanks for an exciting race, guys



L.A. CHAMPIONSHIP POINT STANDINGS

1.	MIKE STEUBE	28
2.	JOHN ANDERSON	19
3.	BRUCE ERICKSON	9
3.	STEVE BOGUT	9
4.	DOUG HENLINE	8
4.	PHIL RUBIN	8
4.	MIKE MORRISSEY	8
5.	JOHN CUKRAS	7
6.	MATT AZZARA	6
7.	LEE GILBERT	5
8.	TERRY SCHMID	4
9.	MIKE JACOBSON	3
10.	JOHN STREET	2
10.	DAVE KIMBALL	2
11.	DAVE GRANT	1
11.	BILL STEUBE JR.	1

NAME	TEAM	E.T.	LAPS	BODY TYPE	MOTOR	REWIND TURNS No. WIRE	MAGNETS	CHASSIS
JOHN ANDERSON	ZIMMERMAN	5.13	482	HONDA ROBERTY	ZIMMERMAN	27-D28	MURA	MORRISSEY
MIKE MORRISSEY	RUSSKIT	5.04	437	COOPER-BRM	ZIMMERMAN	-D28	MURA	MORRISSEY
MIKE STEUBE	CHECKPOINT	5.09	436	DYNAMIC FERRARI	STEUBE	-D28	MURA	STEUBE
JOHN CUKRAS	MURA	5.22	434	DYNAMIC HONDA	MURA	D27-28	MURA	MORRISSEY
STEVE BOGUT	REETEEZ	5.17	433	DYNAMIC HONDA	LENZ	-28	LENZ	OWN
MIKE JACOBSON	HOUSE OF HOBBIES	5.07	432	LANCER FERRARI	STEUBE	-D29	VERSITEC	OWN
DAVE KIMBALL	HOUSE OF HOBBIES	5.16	428	HONDA	THORP	-D28	VERSITEC	GOSMA
LEE GILBERT	ZIMMERMAN	5.00	416	DYNAMIC HONDA	ZIMMERMAN	-D28	MURA	GILBERT

This Russkit Cooper-BRM of Mike Morrissey's was as fast or faster than any car on the track. Pete Zimmerman supplied all the fantastic horsepower, which allowed Mike to cut 2nd quickest qualifying time and also take 2nd in the main. Mike built the chassis and really does beautiful workmanship. He also is a good chassis tuner. He knows what works and what will not work. Mike is selling his chassis now in a limited number and if you can get one you'll be well satisfied.

Third place in the main went to Mike Steube's Dynamic Ferrari. Power was supplied by his father, Bill Steube, Sr. Mike's chassis was fairly typical of most of the cars in the race — Plumber on the drop arm and tons of lead on the drop arm. It seemed to be the only way to get these GP's around the track.



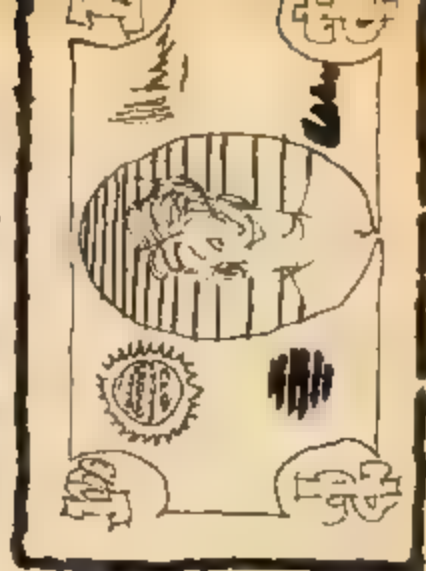
Semi-main event winner was John Cukras who also got 4th in the main. John was a little disappointed qualifying in the "A" consie but he won that and then the semi and then ran in the main. All of this enduro power came from a "Cukarized" Mura motor. For some reason or other the Mura motors are an overwhelming favorite on the West Coast but on the East Coast Champion holds the edge. Very interesting.

Ron Firestone won Concours honors with this very beautiful Honda. Our concours rules stipulate the car must also be a race car as this one was by the fact that Ron raced it in the semi-main.



FRONT WHEELS	FRONT TIRES	REAR WHEELS	REAR TIRES	TIRE GOOP	GEARS & GEAR RATIO TO 1	CONTROLLER	PICKUP
RIGGEN	RIGGEN	RIGGEN	DYNAMIC BLUE	ZIMMERMAN	COX 5.2	RUSSKIT	SIMCO
RIGGEN	RIGGEN	ASSOCIATED	ASSOCIATED ORANGE	DART	COX 5.2	RUSSKIT	SIMCO
ASSOCIATED	ASSOCIATED	ASSOCIATED	ASSOCIATED ORANGE	OWN	COX 4.8	PARMA	SIMCO
RIGGEN	RIGGEN	RIGGEN	RIGGEN ORANGE	MARTEX	BEHCO 4.8	PARMA	COBRA
RIGGEN	RIGGEN	RIGGEN	RIGGEN ORANGE	RIGGEN	COX 5.2	PARMA	SIMCO
RIGGEN	RIGGEN	RIGGEN	RIGGEN ORANGE	OWN	DYNAMIC 4.8	PARMA	OWN
RVM	RVM	DYNAMIC	DYNAMIC ORANGE	DON'S	COX 4.8	RAM	KIMBALL
RIGGEN	RIGGEN	ASSOCIATED	ASSOCIATED	DART	COX 5.2	PARMA	SIMCO

BIG MONEY WINNERS ANNOUNCED



Here are the lucky (and talented) winners of the Third Annual Model Car Contest sponsored by A.M.T. Corporation and the 7-Eleven Food Stores.

SAN DIEGO - Cash prizes of \$1,000 were awarded today to a 15-year-old Southern California youth and an 11-year-old Northern California boy who were named Grand Champions of the Third Annual Model Car Contest sponsored by 7-Eleven Food Stores and A M T. Corp.

Winner of the senior division (13 to 17) is Glenn Sparks, 181 E. Grant St., Rialto near Riverside, California. Champion of the junior division (to age 12) is David James Book, 17911 Vallejo Drive, Saratoga, near San Jose, California.

Glenn and David were among 14 finalists flown to San Diego, California by the contest sponsors to attend a luncheon at the Bahia Hotel where the judges' selections were announced. More than 21,000 model cars were built and entered in the competition by boys and girls in the four-state area of California, Nevada, Oregon and Washington.

In addition to their \$1,000 cash awards, both Grand Champions received large trophies and merchandise gift certificates.

Other winners in the senior division according to the way they placed included

But Metz, 16, San Jose; Wayne Keller, 16, Bakersfield; Daniel Lee Burry, 16, San Diego; Dale Green, 17, Auburn, Wash.; Chris Mikuriya, 16, Berkeley; and Richard Dennett, 13, So. Lake Tahoe, Calif. Junior division finalists ranked in this order: Dusty McCormick, 10, of Walnut Creek; Randy Sparks, 12, brother of senior division champion Glenn; Pat Marshall, 12, So. Lake Tahoe; Max Wuthrich, 12, Canoga Park, Calif.; Corky Fox, 12, Chula Vista, Calif.; and Casey Stafford, 12, Federal Way, Wash.



Glenn Sparks, 15, and his parents, Mr. and Mrs. Jack Sparks of Rialto, California, beam with pride after Glenn won the championship of the senior division in the 7-Eleven Stores Third Annual Model Car Contest. The champion won a number of prizes, including the \$1,000 bill Mrs. Sparks is holding. Final judging was held Saturday in San Diego, California, where all finalists were guest of 7-Eleven. The Sparks family lives at 181 E. Grant Street. More than 21,000 models were entered by boys and girls in California, Nevada, Oregon and Washington.

40/Model Car Science



David James Book, 11, and his parents, Mr. and Mrs. Robert Book of Saratoga, California, beam with pride after young David won the championship of the junior division in the 7-Eleven Stores Third Annual Model Car Contest. The champion won a number of prizes including the \$1,000 bill Mrs. Book is holding. The Book family lives at 17911 Vallejo Drive. More than 21,000 models were entered by boys and girls in California, Nevada, Oregon and Washington.



Glenn Sparks, Senior Category Grand Champion of the recent 7-Eleven/AMT Model Car Contest examines the winning car and his grand prize of \$1,000 bill. Glenn's car, as you can see, is a real winner in every sense

The letters of anguish that flow into *Model Car Science's* offices from frustrated "paint puddlers" are a constant source of concern to us. *Painting is easy!* There's no reason for becoming frustrated over such a simple job.

Here are a few simple tips to help you apply better paint jobs. This is not a complete course on how to paint (we've run many such articles in the past). No, it's simply a collection of basic rules that every modeler should know, no matter what type of paint he's painting. Painting is painting, period.

Here is a list of do's and don'ts:

DO: Prepare the body shell thoroughly before you begin painting. Fill all bad spots with body putty and sand and smooth when dry.

DO: Wash the prepared (puttied and sanded) body in warm water, scouring the shell gently with your fingers and kitchen cleanser. Rinse clean and let air dry.

DO: Lay several coats of primer on the shell, inspecting each coat for imperfections before sanding lightly, washing in warm water, air drying and respraying again with primer.

DO: Sand the final coat of primer with extremely fine sandpaper (the finest you can buy—No. 400 minimum); wash in warm water and air dry.

DO: Spray the finish coats on in very thin coats, allowing each coat to thoroughly dry before applying the next.

DO: Spray in a calm, dust-free area.
DON'T: Spray in wet weather or at all possible humidity in the air retards drying time.

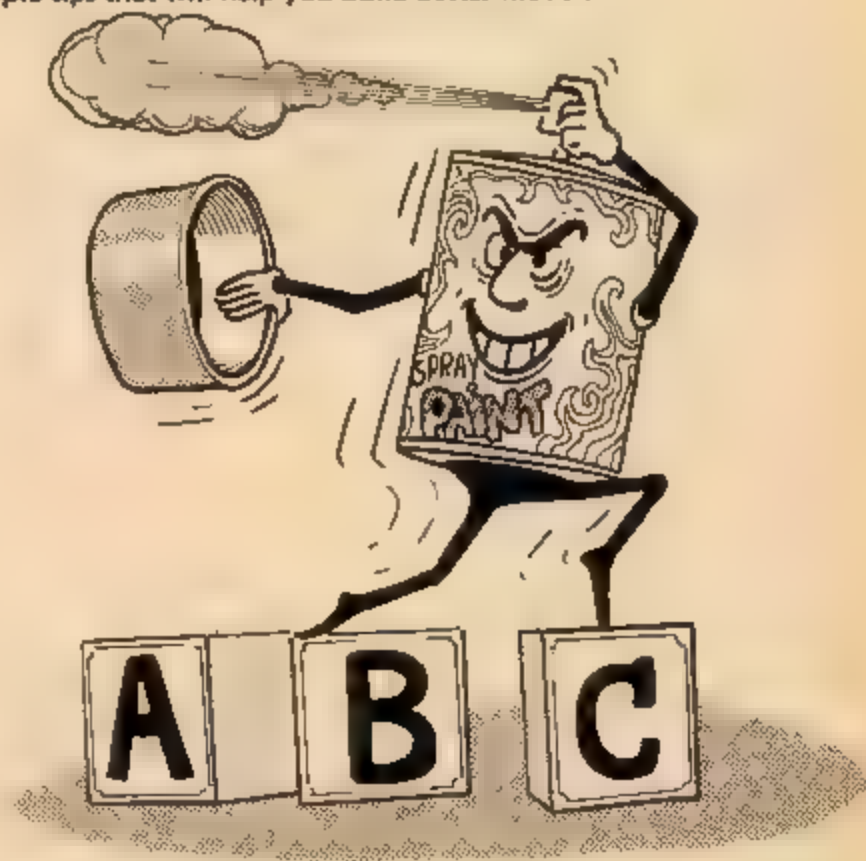
DON'T: Spray in the house, or anywhere else where the "overspray" (the fine, dust-like paint particles in the air) can settle on your mother's furniture, etc.

DON'T: Touch the model with your fingers, *period!* Even clean skin leaves slight deposits of oil that will ruin a paint job. This particularly true prior to applying paint. And even paint that has dried dried for several days is "soft" beneath the surface. If you pick up a model with your fingers, you can actually leave fingerprints in the paint.

DON'T: Rush a paint job. *EVER!* It's the surest way to ruin your model.

BASIC PAINTING POINTERS

Simple tips that will help you build better models



Never begin a spray job before you warm the can of paint in warm tap water. Do not put the can in hot water (and never in boiling water). It could explode!



Shake the can thoroughly after removing it from the water, dry with a towel, then shoot a bit on an old box to clear the nozzle.



"Distance indicators" can be made of balsa sticks, pencils, wire, etc., and taped to the can, as shown here. If you're not supposed to get closer than eight inches, for instance, cut the sticks so they're eight inches from the tip of the nozzle. These distance indicators will help you do a really expert job of painting.

Rig up some type of stand to hold your model while you spray it. An old coat hanger, or something similar, works well. You can tape it to the inside of the body shell to make sure the model doesn't fall off into the dirt while spraying it.



All spray coats should be started a few inches in front of the model. Press the nozzle down to start the spray, move across the model at a medium speed, never hesitating over one spot on the target (to avoid "puddling"), and spray a few inches past the model before releasing the nozzle.



Always invert the can and press the nozzle after you've finished painting. This will clear the nozzle of paint. Hold the button down until the spray stops.

Place the finished, painted shell in a shoebox, footlocker, or other container. Keep the lid on tight and let the paint dry for a few days. It'll dry completely dust free.



Brush detailing requires very fine pointed brushes. If necessary, trim the tip to a point with an X-Acto blade or something similar.



It's best to dip into the small amount of paint that accumulates on the lid of the bottle (after the bottle is thoroughly warmed in water and shaken). Never use too much paint on a brush, unless you're purposely trying to drop a heavy deposit of paint into some small area. Dip the brush, then wipe it across the edge of the lid. The amount left in the bristles should be just right.



Steady the wrist holding the brush with the other hand. Take a deep breath, let it all out, take a half breath and hold it. Paint until you finish the job or run out of air. This is one way to really get a steady hand, which is vital in tiny hand lettering.

A model that is painted the correct way is a wonderful thing to behold. These tips apply to any type of painting, lacquer or enamel.

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THE AMERICAN COLLECTOR

By David Sinclair

This is the first column of a regular monthly series by David Sinclair, the well-known mail-order entrepreneur, who first imported the 1/43 scale die-cast cars from Italy, France and other countries when only the products of British firms were available to collectors in the United States.

A former sales promotion executive in American industry, Dave began his mail-order operation in 1964 as a part-time venture. For several years, he continued to hold a full-time position as sales promotion manager for a Rochester, New York corporation, operating Sinclair's Auto Miniatures nights and weekends. In July 1967, he resigned from his position with the large corporation to devote full time to his own business of serving collectors of 1/43 scale die-cast cars and super deluxe kits which he mails to enthusiasts throughout half the world.

Recently, Dave journeyed to Milan, Italy and Paris, France to review the future releases of the leading die-cast manufacturers, and in this column he reports on his trip. In future months he will review and rate the new releases as they arrive in the U.S., and report on various interesting and little known aspects of this fascinating hobby which is one of the fastest growing in America today.



Dave Sinclair with Mercedes SSKL built from all-metal, 1/24 scale AUTO-KIT from England.

Recently, I flew to Milan, Italy to visit the International Toy Fair which is, in part, a veritable miniature auto show. After a sleepless night flight, I was dismayed to find we couldn't land at Milan due to the usual heavy fog over the city at this time of year. So, the plane put down at Turin, the home of a wonderful antique auto museum which I would like to have visited, but the airline had arranged for a bus to transport all passengers to Milan. After an additional two hour bus trip, I checked into the Hotel Duomo at noon (6:00 A.M. Eastern Standard Time) and slept until dinner.

Next morning I hired a tiny Fiat taxi and proceeded at typical Italian cab driver breakneck speed through the streets of Milan to the exhibition hall. Along the route I was amused to see cars parked on sidewalks, on the grass, around intersection corners, etc. No parking meters and apparently few restrictions. While the majority of the cars on the street are "compact" compacts in Milan one can see many of the wonderful Lamborghinis, Maseratis, Alfa Romeos, Ferraris and Lancias which here we generally see only in magazine photographs.

The exhibition hall is a tremendous and beautiful building. A general toy buyer could have spent a week there but as my interest was limited to the miniature cars I spotted the manufacturers' locations on the map in the program and proceeded to find my way to each of them.

Dugu was showing a 1925 Fiat 509, so typical of cars of that era. It will be available as a sedan (Dugu No. 14) and as an open touring car (Dugu No. 15). Dugu was also showing the famous American Classic 1936 Ford, both with top up (Dugu No. 18) and top down (Dugu No. 20). They had drawings of a beautiful Rolls Royce Phantom II drop head coupe with coach work by Barker & Co., but prototypes were not ready for the show. This model will surely be popular with classic car buffs when released later this year. Art work indicates the car will be in rich black with tan top rolled open over the front seat only, a bug trunk and continental type spare on the rear. This will be Dugu No. 21. The 1934 Fiat Batalla Coppa d'Oro (Dugu No. 17), while all plastic is very well done and has been a popular number with collectors since it began to appear in limited quantities just prior to the recent longshoreman's strike. This sporty little car with motorcycle type fenders, hinged hood opening from either side, detailed engine, folding windshield and opening doors, is one of the best things Dugu has done to date. In their lower priced Museo line the 1948 Castalia "202" is a metal model of the design which first brought fame to Pininfarina. I understand the actual car is, or has been, exhibited at the Museum of Modern Art in New York City. Also coming from Dugu in their Museo series is the 1914 Lancia Theta, a typical chauffeur driven limousine of that era.

Politoys showed only one new model in their "M" series, the Lamborghini Espada (Politoys No. 587). In their new detailed "Export" line, several new numbers will be

forthcoming Ferrari P5 Jensen Coupe, Vignale, Ghibli Maserati and Ferrari P4. A few of the new cars in the "Exotic" line are already available in the United States. The Ferrari 330 GT (Polito No. 562) is blue with opening doors, tan interior. Ferrari Dino Berlinetta (Polito No. 589) is red with adjustable white spoilers at nose and tail and gull wing doors that open. The Samurai (Polito No. 580) is pure white with an adjustable red spoiler at the rear. The rear engine is visible through the large window in the hinged rear section. Finally, the Panther Bertone (Polito No. 564) — a very neat two-tone mandarin orange with black — with fixed white spoiler in mid position, doors that open, air scoop and interesting headlight detail.

The really big and surprising news from Polito is their new and ultra-detailed 1/25 scale metal line. These are very heavy models with actual steering activated from the steering wheel and of course the size enables them to include even more detail than we have all come to expect from Polito. Due to their size, I don't think 1/25 will ever replace 1/43 scale in popularity with the collector but a few of these will add real interest to any collection. I saw prototypes of the first three 1/25 Politos in Italy: the Osai Scarabeo, Ghia Mangusta de Tommaso, and Carabo Bertone. The latter design is uniquely reminiscent of that strange little animal native to our South West, the Armadillo. Polito expects to have at least the first two of these in the States by mid-summer and the price tentatively is expected to be around \$10.00.

Mercury, whose earlier die casts were frankly a bit crude in comparison to Polito and Mebtoy, are improving with every new release. This year they will have the Alfa Romeo "Montreal" Bertone, Ferrari "Can Am" and, inspired no doubt by the success their version of the Fiat Balilla Coppa d'Oro, will introduce the second of their "Veteran" cars the Lancia Aprilia Berlinna, a sedan of the 30's on which all four doors, hood and trunk will open, and will feature a detailed engine. Of particular interest to me will be their release of the Fiat 124 Sport Coupe. I hope they make one in gold for it will be a duplicate of the model I'm driving. Already available in the U.S. is Mercury's No. 63, the Fiat Dino Coupe Bertone with opening doors and a nicely detailed interior including folding seats and console.

Mebtoy is readying a very nice model of the famous Japanese Toyota 2000 GT, the hardtop coupe version. Previously, the only Toyota 2000 GT was Corgi's James Bond Special with rockets et al, so here's one that will please you purists. Also from Mebtoy; the Iso S4 — a beautiful four door sedan Nyl. R/80 Wankel, Vatra Vignale \$30, Lotus Europa and Land Rover Trans-American tour car complete with spare mounted on top of hood, luggage on the overhead rack and "around the world by car" signs on the side.

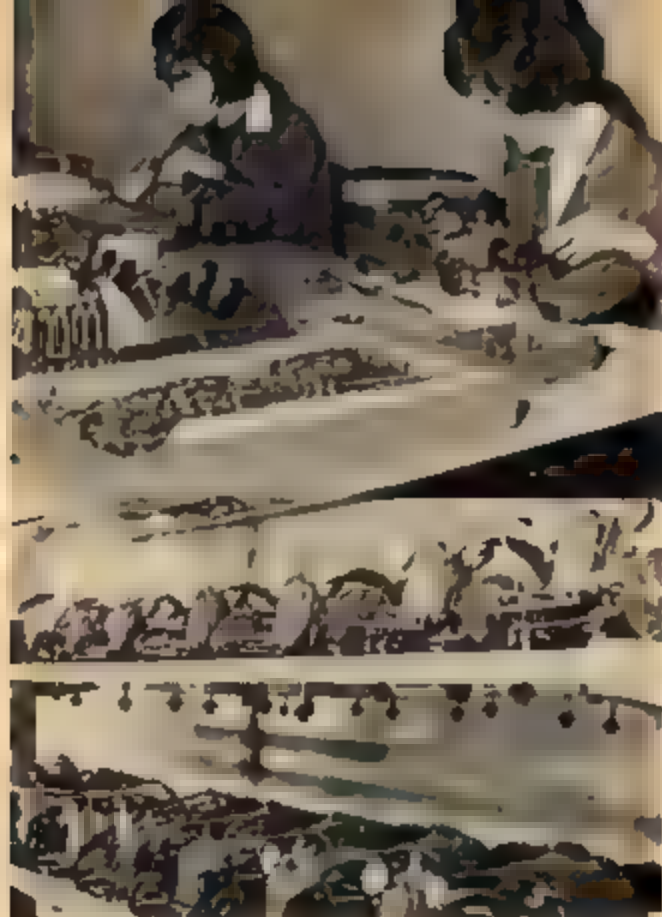
For several years, American collectors have wondered why so few American marques have been immortalized in 1/43 scale. The answer is rather basic for the hobby of collecting these miniatures had been popular in Europe for many years before a wide range was available in America. Naturally the manufacturers felt that models of European cars would be more popular sellers there and, with the exception of the Model T Ford and a Chalmers-Detroit by Rio, models of American cars were just not to be had. One of the most desired and most requested has been the famous American classic 1941 Lincoln Continental V-12. I have repeatedly suggested to Rio and other firms that with the growing interest and market in the United States, a bit more emphasis on American cars would not only be appreciated by American collectors but would undoubtedly find a market with the European collector as well. When I arrived at the Rio booth, Signor Colombo of the Rio Company proudly showed me prototypes of their exactingly scaled 1941 Lincoln Continental. The top up version



Clockwise: Austin delivery Truck, by Minialuxe (No. 27); Lancia Flavia Zagato, by Polito (No. 509); Ferrari 330P4, by Mercury (No. 63); Lauchester 1908, by Minialuxe (No. 29); Delaunay Belleville, by R.A.M.I. (No. 20); Landau Park Royale 1912, by Minialuxe (No. 27).

(Rio No. 43) is expected to be released in a rich dark blue with light top and white upholstery, the top down version (Rio No. 44) will be in a light silver grey with black top and red upholstery. Both models will have white sidewall tires, doors and hood open, and a detailed engine will be found inside. No definite date has been set for delivery in the U.S. but we expect it will be some time this summer. Of almost equal interest are Rio's Rolls Royce Phantom II 1931 convertible coupe. This is the first 1/43 model to our knowledge to have a working rumble seat as well as doors and hood that open and detailed engine. It also has white sidewall tires, chrome wire wheels and two spares mounted in fender wells. Top up version (Rio No. 39) is expected to appear in turquoise with white top, top down version (Rio No. 40) will be in yellow with black top. I'm happy to be able to give these top rating of five stars. Other new models to be introduced by Rio will be the 1908 Fiat 18/24 hp. limousine (Rio No. 38) with yellow coachwork, black top, hood and fenders and red spoked wheels, brass headlights and trim of course, and luggage rack over the driver's compartment.

There are too few models available in the era of the 1920's but Rio will help fill this gap this year with their 1929 Lancia "Di Lambda" V-8. It will be available as a closed four door sedan, two tone green body with black top and two spares mounted in fender wells (Rio No. 41). The same Lancia will also be offered as Rio's No. 42 in a touring car version — red with light colored convertible top and twin spares mounted on the rear.



Scenes from the production line of the 1/8 scale Alfa Romeo, at the Pocher plant, Turin, Italy.

A trip to Milan would not be complete without a visit to the famed La Scala Opera House, so I attended this famous theater on my last night in Italy.

Next day I flew to Paris, checked in at the Hotel Scribe in the heart of the city and made my way by Metro (the Paris subway) out to Place de Versailles for the Paris Toy Fair. I must mention that the Paris subway is far superior to ours in New York City, both in appearance and operation. It is quite easy for a stranger to find his way for each station is equipped with an electric map. By merely pushing a button indicating your desired destination, tiny lights point out the route on the map and tell you which line to take. Since my time was limited, I found that travel by subway was much faster than by taxi in traffic-laden Paris.

My first visit was at the Solido booth where I was greeted by the very charming and attractive lady who is chief executive of the Solido Company. She proudly showed me the latest in their wonderful "Golden Age" series, the Duesenberg sedan, and apologized for the long delay since this model was first announced last fall. The reason was production problems, but after seeing this model I am sure you will agree it has been well worth waiting for. Some collectors expressed a bit of disappointment that Solido did not choose a dual cowl phantom, but I believe everyone will be impressed as, in my opinion, this is one of the greatest replicas Solido has produced. It sports a two-tone paint job with fenders and top a different color than the body proper, six wire wheels with chromed spokes and white sidewall tires. The fender mounted spares are complete with chrome tread covers, a first in 1/43 scale and a touch that adds great distinction to this fine model. A huge five and one quarter inches long complete with the distinctive Duesenberg radiator ornament. Other models planned by Solido in 1969 are the De Tomaso "Mangusta" with rear engine compartment covers that pivot up just like the actual car, the Matra F1 V-8, Ferro 21.5 Alpine F 2, Alpine 3L and Carabo Bertone. Already available in the U.S.

are Solido's No. 171 Opel GT (you may have already seen this striking new Opel at your Buick dealer) — it looks like a baby Corvette and Solido's scale model has those revolving headlights working just like the real thing plus doors that open. We rate this one three stars. Also available now is Solido's No. 170 Ford Mark IV with detailed engine and racing mirrors. A four star rating to this one.

Sablon of Belgium, a new firm only about a year old, was also showing in Paris. Their early effort of the Porsche Targa was frankly not up to the quality of some of the French and Italian firms but their latest release, the Lamborghini Marzal, shows such great improvement we must award it four stars. Even if you have Politoys Export's version of the Marzal you'll want this one for as you know, Politoys Export is that company's cheaper, less detailed horwherras Sablon has produced a very detailed model of this most unusual Lamborghini.

I saw several actual Matras on the streets of Paris. This is a new name in French sports cars and this smart and uniquely designed car is probably not too well known to Americans yet which may account for the fact that not many of you have added French Dinky's 1/43 scale Matra M530 to your collection. Frankly, we feel French Dinky's quality is superior to that of their British sister firm and the Matra (French Dinky No. 1403) is one of their best. It has headlights that pop up, activated by a button beneath the chassis, and the two-piece top is removable much like the new Corvette. This one, however, opens completely while the Corvette leaves a fixed section overhead between the seats. French Dinky's Matra Sports M530 comes complete with a display case.

Another new firm, FaRaCars, will offer built-in-France 1/43 scale replicas of famous Indianapolis racing cars. Their first release (available now) is the '31 No. 40 Turbine Car (FaRaCars No. 101) and it gets five stars for its clean detail and best paint job we've seen on a 1/43 model — four coats! Comes complete with full sheet of decals. Watch this firm for future Indy cars including the famous 1911 Marmon, later.

The reception for Pocher's super 1/8 scale kits of the 1931 Alfa Romeo "Monza" and 1907 Fiat Grand Prix has been so great that the factory has been having difficulty keeping pace with the demand. Never before in history had kits been offered at more than \$15.00 and no one anticipated such a healthy market for kits priced at \$60.00 and \$45.00 but then there have never been such challenging kits available before. The Fiat with 812 parts and Alfa with 1452 parts intrigue the serious enthusiast who delights in so many parts of brass, stainless steel copper etc. in addition to the plastic parts which usually make up 100% of the ordinary kit at lower prices. Of course, after putting 100 to 150 hours of time into building such a model, almost everyone is concerned with protecting his masterpiece from dust and careless handling. I suggested to Pocher that they make available a display case kit to protect either the Alfa or Fiat and when I visited Pocher's booth in Milan, Signor Muratore showed me prototypes of a wood based plastic covered display case kit that is expected to be in the U.S. in August or September and will be priced at \$14.95.

Well fellow collectors, that's my 'on the scene' report from Europe. Wish you could all have been with me. Next month I'll have photos of several new models available now in the U.S.

In June a new line of wood 'n metal kits will make their debut with the 1910 Maxwell. Built by a U.S. firm which has been previously known for their fine ship models, this 7 1/2" long Maxwell will feature metal fenders, hood, radiator and fittings with wood chassis, body and wood display stand. I haven't seen complete prototype yet but the sample metal louvered hood and other parts sent to me look very good. Should be a real nice kit at only \$12.95.

GET GOING WITH GEARS

The techniques of transferring torque and shaft speed from the motor to the rear wheels are among the first things you must learn to field a model car with win-potential.

Model car gear suppliers have been working to improve the efficiency of their gear design through gear tooth shape and material improvements. Their efforts have been most successful.

Today the model car builder/tuner has a choice of three basic motor/axle locations: the *inline* design with the axle shaft at a 90 degree angle to the motor shaft, the full *sidewinder* with the axle shaft perfectly parallel to the motor shaft, and the new *anglewinder* design with the motor shaft at a 2 degree, 10 degree, 14 degree, or 20 degree angle to the axle shaft. If you already have a "suitable" chassis, simply pick the appropriate gear type, pitch, and number of teeth for the

axle gear mount it, and adjust it so the axle and motor gear teeth mesh smoothly together.

If you are planning to build your own chassis, you'll have to choose how you want to mount your motor and axle and then select an inline, sidewinder, or anglewinder gear set to suit your design.

If you have a car you feel is basically quick, the only reason you'd even think about the gears (other than to replace a worn-out gear) would be to change the "gear ratio." The gear ratio is the number derived by dividing the number of teeth on the motor gear. The number you arrive at, from this simple mathematical division process, is the number of times the MOTOR shaft will rotate for each revolution of the AXLE shaft. Both 1/32 scale and 1/24 scale cars run about the same size tires, with motors of similar torque and speed. The

motor must revolve between three (a 3:1 gear ratio) and six (a 6:1 gear ratio) times as fast as the axle. If the motor is geared to revolve slower than this it is forced to work harder than its available power will allow, if it is geared to revolve faster than this you are wasting a lot of its available speed.

The "perfect" gear ratio is one that matches the peak of the motor's performance to the fastest speed the car can attain through the corners and down the available length of straight track. The number of factors that influence a car trying for maximum performance is mind bending. For instance, you must consider the motor's magnets and windings, the chassis' weight, the exact tire diameter and traction, the track's power supply (batteries or transformer), the length and number of straight sections in the track, and the radius and/or banking of the track's corners.



Even if you have a car that performs perfectly on a given race track a change in any one of the above factors will usually require a change in the car's gear ratio. There is NO way I can tell you what is the best gear ratio for your car/track factors. To find the best ratio, you can either copy what the faster cars are using (assuming the faster cars are identical to yours) or you can experiment. Try a 3:1, 4:1, 5:1, and a 6:1 gear ratio in your car and note which gives you fastest lap times--this will at least put you "in the ballpark." The exact best gear ratio can then be determined by changing the axle and/or motor gears, substituting a gear with only one tooth less or one tooth more until you find the gear ratio that gives the absolute best lap times. If for example you

found that your car ran best with a 5:1 gear ratio (i.e. "best" of the 3:1, 4:1, 5:1, 6:1 choices) and that you had to use a six tooth motor (also called "pinion" gear) gear and a 30-tooth axle gear your next step, in our theoretical example, would be to substitute gears with different numbers of teeth to allow every possible gear ratio between 4.5:1 and 5.5:1. In this case, you could probably substitute 27, 28, 29, 31, 32, and 33 tooth gears for the 30 tooth axle gear. You can see from the gear ratio chart on these pages that these axle gears, meshed with a six tooth motor (pinion) gear would give you gear ratios of 4.50, 4.67, 4.83, 5.17, 5.33 and 5.50:1 respectively. By comparing your lap times with the car equipped with each of these alternate gear



"Inline" style of gearing on a modified Revell 1/32 scale home set chassis. This type of gearing is easiest to use in any 1/32 scale car and in 1/24 scale GP cars.



"Sideunder" style of gearing provides the most mechanically efficient set up, but relatively narrow tires must be used to clear motor and still be within most overall width rules.

ANGLEWINDER ANALYSIS

A manufacturer-by-manufacturer survey of all of the anglewinder gears now on the market. The "degree" (like 14 degrees) figures indicate the exact angle that should be formed between the motor shaft and the axle shaft. You MUST have the same "pitch" axle and motor gears and, even better, use the same brand of motor and axle gear.

COBRA

64 pitch gears, 20 degrees, 8 or 9 tooth brass pinions, 25 cents. 44, 45, 46, or 47 tooth space-age plastic axle gears, 75 cents.

CHAMPION

72 pitch, 20 degrees, 9, 10, 11, or 12 tooth steel pinions, 75 cents. 52 tooth steel axle gear, \$2.50.

DYNAMIC

48 pitch, can be used from 10 degrees to 20 degrees, 6, 7, or 8 tooth brass pinions, 39 cents. 32, 33, 34, 35, or 36 tooth alloy axle gears, \$1.10.

PHAZE III

48 pitch, 20 degrees, 6, 7, 8, 9, or 10 tooth brass pinion gears, 15 cents. 34 tooth axle gear, 98 cents.

RENCO

48 pitch, choice of 2 degrees, 10 degrees, 15 degrees, or 20 degrees, 28, 29, 30, 31, 32, 33, 34, or 35 tooth space-age plastic axle gears.

RIGGEN

48 pitch, 20 degrees, 32, 33, 34, or 35 tooth space-age plastic axle gears, 89 cents.

WELDUN

48 pitch, 14 degrees, 6, 7, 8, or 9 tooth brass or steel pinions, 35 cents. 30, 31, 32, 33, or 34 tooth alloy axle gears, \$1.00. 64 pitch, 10 degrees, 9, 10, 11, or 12 tooth steel or brass pinions, 35 cents. 42, 43, 44, 45, or 46 tooth alloy axle gears, \$1.25. 64 pitch, 20 degrees, 9, 10, 11, or 12 tooth steel or brass pinions, 35 cents. 45, 46, 47, 48, 49, or 50 tooth alloy axle gears, \$.25.

ratios, you should be able to quickly determine which exact ratio is best for your car/track conditions. Such experiments in gear ratios can easily reduce your lap times by as much as 50%! If this doesn't impress you, consider the fact that it probably will impress your competitors. In any type of racing, you've got to get the very best possible performance from your car if you expect to win!

The choice between inline side-winder, or anglewinder motor/axle configurations and their alignment is part of basic chassis design—we'll discuss that in a later article. With ANY of these three, it is most important that you insert enough spacer washers between gear and rear axle bearings, or behind each wheel, so that the axle and its gear cannot move sideways more than the thickness of a piece of tissue paper—no more, no less. The amount of end play on the motor shaft must be set at this same minimum as well. You must also check to be sure that the axle gear is smaller in overall diameter than the tire, and that the motor (pinion) gear cannot hit the tire or the set screw on the axle gear.

The amount of "play," or clearance between the axle and motor gear teeth as they mesh together varies with the "pitch" of the gears you use. "Pitch" is the number of gear teeth that the gear would have if it measured one inch in circumference. All of the American-made axle gears for inline motor/axle chassis have a 48 pitch. Sidewinder gears are available from different firms in either 48 pitch or 64 pitch. Anglewinder axle gears are offered in 48, 64, or 72 pitch. ALWAYS use a motor (pinion) gear with the exact same pitch as the axle gear. Even better, use identical brands of axle and motor gears (with the same pitch) whenever you can. The final gear mesh adjustment on either an inline or an anglewinder chassis is achieved by loosening the axle gear's set screw, moving the axle gear a "hair" closer or further from the motor (pinion) gear, and retightening the set screw. Gear adjustment on a sidewinder (and major adjustment on a sidewinder) are achieved by moving the entire motor and its gear. There should be about 1/16" of free movement, or gear "slop," measured at the tire's outside edge with 48 pitch gears. The "slop" with 64 or 72 pitch gears should be only about 1/64" measured at the tire's outer edge. The 64 and 72 pitch gears are more efficient power transmitters, according to engineering theory, but they do require extremely careful adjustment and, therefore, are recommended only for those with some experience in model car gear adjustment.



Most racers like ease of adjustment offered by 48 pitch gears. 6 and 7 tooth pinions gears (Weldun, here) allow builders to achieve the now-popular "high" gear ratios of 5:1 to 6:1 with axle gear still smaller than overall tire diameter.

Booming popularity of "anglewinder" motor/axle location has prompted a wide variety of special gears from Cobra, Champion, Dynamic, Riggen, and Weldun as well as REHCO and Phase III.



"Typical" anglewinder motor/axle layout in Dynamic's new 1/24 scale ready-to-run car. For a perfectly parallel sidewinder axle/gear layout, the motor would have to be cut away to clear axle. "Anglewinder" is a compromise design that places motor in a better location for overall chassis weight distribution with extrabeneficial of more efficient gearing.



Cobra's space-age plastic anglewinder axle gear is designed for chassis where angle between motor and axle shafts is 20 degrees. Cobra offers 64 pitch pinions to match axle gear's pitch



Riggen has a 48 pitch space-age plastic "anglewinder" axle gear that is engineered to mesh with any popular brand of 48 pitch pinion gear. For 20 degree motor/axle chassis.



Weldun offers the widest variety of "anglewinder" gear options with both 48 and 64 pitch, 10 degree, 14 degree, and 20 degree angle axle gears of metallic alloy.



Initial "loose-mesh" gear adjustment on anglewinder chassis is accomplished by moving entire motor. Final (and necessary) adjustment requires the addition of shim-thin metal washers between axle gear and chassis. Add enough washers so a piece of tissue paper will be clamped between gears. Remove paper and check mount of "free" back-and-forth rotation of axle available without turning motor shaft. Edge of tire should rotate about 1/16" with 48 pitch gears, about 1/64" with 64 or 72 pitch gears

PINION GEAR

	6	7	8	9	10	11	12	13	14	15	16	17	18
26	4.33	3.71	3.25	2.88	2.60	2.36	2.16	2.00	1.85	1.73	1.62	1.53	1.44
27	4.50	3.86	3.37	3.00	2.70	2.45	2.25	2.07	1.92	1.80	1.68	1.59	1.50
28	4.67	4.00	3.50	3.11	2.80	2.55	2.33	2.15	2.00	1.86	1.75	1.65	1.55
29	4.83	4.14	3.62	3.22	2.90	2.64	2.41	2.23	2.07	1.93	1.81	1.70	1.61
30	5.00	4.29	3.75	3.33	3.00	2.73	2.50	2.30	2.14	2.00	1.87	1.76	1.66
31	5.17	4.43	3.87	3.45	3.10	2.81	2.58	2.38	2.21	2.06	1.93	1.83	1.72
32	5.33	4.57	4.00	3.55	3.20	2.90	2.66	2.46	2.28	2.13	2.00	1.89	1.78
33	5.50	4.71	4.12	3.66	3.30	3.00	2.75	2.53	2.35	2.20	2.06	1.94	1.83
34	5.67	4.86	4.25	3.77	3.40	3.09	2.83	2.61	2.42	2.26	2.12	2.00	1.88
35	5.83	5.00	4.37	3.88	3.50	3.18	2.91	2.69	2.50	2.33	2.18	2.06	1.94
36	6.00	5.14	4.50	4.00	3.60	3.27	3.00	2.77	2.57	2.40	2.25	2.11	2.00
37	6.17	5.29	4.62	4.11	3.70	3.36	3.08	2.84	2.64	2.46	2.31	2.17	2.05
38	6.33	5.43	4.75	4.22	3.80	3.45	3.16	2.92	2.71	2.53	2.37	2.23	2.11
39	6.50	5.57	4.88	4.33	3.90	3.55	3.25	3.00	2.78	2.60	2.43	2.29	2.16
40	6.67	5.71	5.00	4.44	4.00	3.64	3.33	3.07	2.85	2.67	2.50	2.35	2.22
41	6.83	5.86	5.12	4.55	4.10	3.73	3.41	3.15	2.92	2.73	2.56	2.41	2.27
42	7.00	6.00	5.25	4.66	4.20	3.81	3.50	3.23	3.00	2.80	2.62	2.47	2.33
43	7.17	6.14	5.37	4.77	4.30	3.90	3.58	3.30	3.07	2.86	2.68	2.53	2.38
44	7.33	6.29	5.50	4.88	4.40	4.00	3.66	3.38	3.14	2.93	2.75	2.59	2.44
45	7.50	6.43	5.62	5.00	4.50	4.09	3.75	3.46	3.21	3.00	2.81	2.65	2.50
46	7.67	6.57	5.75	5.11	4.60	4.18	3.83	3.53	3.28	3.06	2.87	2.70	2.55
47	7.83	6.71	5.87	5.22	4.70	4.27	3.91	3.61	3.35	3.13	2.93	2.76	2.61
48	8.00	6.86	6.00	5.33	4.80	4.36	4.00	3.69	3.42	3.20	3.00	2.83	2.66

AXLE GEAR

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Clip this page and mail to:

Reader Analysis Dept.
Model Car Science Magazine
131 Barrington Place
Los Angeles, California 90049

TELL US ONE!

BE

By Dale Flanagan

How to make independently rotating front wheels

INDEPENDENT!

You usually get things rolling in an article by coming around to your subject, and in this case my subject is wheels. Front wheels. Independently rotating front wheels.

So what's so great about independently rotating front wheels? Well, they help you go fast. Maybe even a little faster than the guys you're racing against, which is what slot racing is all about.

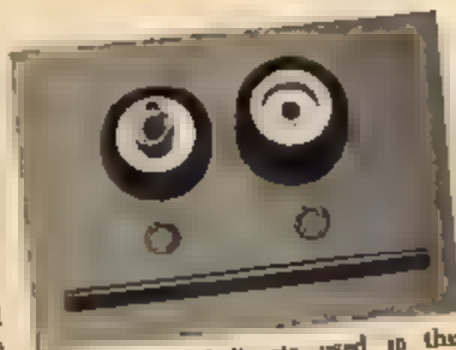
You see, when you go into a turn the outside wheels of a car (slot or full size) have a greater distance to travel than the inside wheels. If both wheels are locked together on a bar axle, then something's got to give, and this something is usually some kind of slippage or "scrub" from one or the other tire. And that's bad. On a slot car this type of tire scrub means more resistance in turns from the front end of the car, and that hurts your handling (you use hard tires or "O" ring tires in the front to decrease resistance).

So what to do about all this? Well, one thing you can do is use a piano wire front axle with pin hole wheels, but pin hole wheels and piano wire dropped front ends are sort of unfashionable now. Everyone seems to be using set screw wheels on a bar axle. A bar axle is usually stronger than a piano wire one, and with a bar axle you can put some side slop into your front axle, and that helps handling, too.

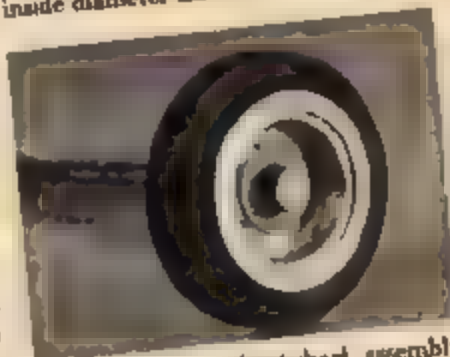
So why not have the best of both worlds? The independent rotation of a piano wire axle with the strength and side slop of a bar axle?

Grab your soldering iron, a set of set-screw front wheels (we used Rugger's No. 510-14 "Wide Oval Fronts" at \$1.25), two washers and an axle, and in five minutes you can have your present bar axle set-up modified to include independent rotation on the front wheels!

The axle and second wheel rotates independently of the first wheel, held on by washers. It's also easy to change front wheels from car to car. Note side slop.



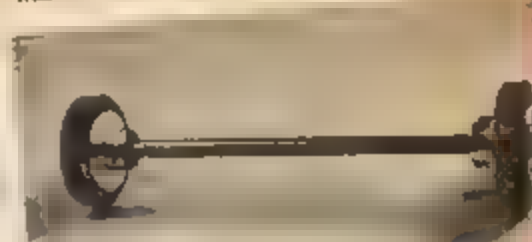
The traditional "parts used in this article" picture: set screw wheels, 3" unthreaded axle, and two thin 1/8" inside diameter axle washers.



Put the axle/washer/wheel assembly on its side and solder the second washer on the outside of the wheel, inside the hub. Make sure the wheel spans freely.



Remove the set-screw from the wheel and place it face down on the building board. Put the axle through the wheel until it touches the board. Solder a washer on the axle, behind the wheel.



By placing the second wheel on the axle so the outside edge of the wheel is flush with the axle tip you get an automatic 3" width. On the car, the second wheel is locked to the axle with a set screw.



KING OF THE COUGAR PACK!

A pause that refreshes at the drag strip is the powerful, brilliant red stormer Cougar of "Dyno" Don Nicholson. The flip-top car knows where the winner's circle is!

"Dyno" Don Nicholson is considered "Mr. Mercury" of the funny car circuit and for his '68 circuit encore Don revealed a new Cougar, sponsored by Coca Cola, Jardine, Goodyear, STP, Buco helmets, Pennzoil, Milodon, B-X 10, Mallory, Crane Cams, Logghe Chassis Model Products Co., Fram and Hurst Products.

The 1968 Mercury Cougar flip-top funny car is painted red and gold by Shedlick, and the body modifications were handled by Pelligrini. "Dyno" Don set up the Logghe chassis with a 120-inch wheelbase. The SOHC Mercury engine is 427 cubic inches and uses Forgetrue pistons with M/T rods and Perfect Circle rings.

As we tried to get more detailed information on the engine, things got touchy. We got the impression that we were asking for a tour through Fort Knox. Information on the intake and exhaust valves were classified as was the compression ratio, special headwork, duration of the Crane cam and the specs on the Mallory ignition. That just goes to show, when you're winning you don't tell the other guy what your beating him with.

The injectors are Hilborn, intake manifold by Ford and the blower is 671 GMC. A Milodon engine support is used on the Nitro burning "cammer," and the blower drive ratio is classified, too. Headers are Jardine. The transmission is a Ford C-6 with Ford drive train throughout, Halibrand wheels and Goodyear tires are used on all fours. The steering gear is by Logghe. Simpson supplies the safety equipment. The cost is \$25,000 and it took two months to build the new fiberglass car. The SX/S Cougar has run a 7.55 going 191 mph.

With performance like that, you can't help but realize how important those speed secrets are to Mercury!

The SOHC Mercury engine uses Forgetrue pistons, M/T rods and Perfect Circle Rings. Headers are by Jardine. The "cammer" is estimated to put out around 1,500 hp.



Logghe built the chassis. The roll bar is made from 4130 aircraft chrome moly .120 thickness. The fire suit is Simpson.



"Dyno" Don Nicholson, the man who put Mercury back in drag racing. Don's new car has run a 7.55 ET going 191 mph.





BUILD THE '68 INDY WINNER

Eagle was the car and Goosen-Drake the engine in '68.

Dan Gurney's Eagle chassis/bodies filled three of the first four places at the '68 Indianapolis 500. Two of these cars sported the Goosen-Drake turbocharged engines; the third used Gurney's Westlake-designed cylinder heads on a "stock block" 305 C.I.D. Ford V8.

The 168 C.I.D. Goosen-Drake fours could lay equal claim to '68 as their year too, with eight of the first ten cars powered by the almost 40 year old design. The double overhead G-D engines are of really classic design (as their age would suggest); the turbocharger has quite literally breathed new life into them.

Any turbocharger is simply a fan driven by the pressure of the engine's exhaust. The 1962 Corvair "Spyder" was equipped with a turbocharge quite similar in its operation to that of the Indy racing cars. The turbocharger's fan acts like a conventional engine-driven supercharger to force air into the engine's fuel injectors or carburetors at greater than atmospheric pressures. The expected gain in horsepower, over a normally injected or carburetored engine, is on the order of 30-plus percent, reflected in the fact that USAC's Indy-type rules allow a double overhead cam racing engine to have 255 C.I.D., while the turbocharged engines are limited to 168 C.I.D. Ford tried turbocharging on a reduced capacity 168 C.I.D. V8, but not one of the five qualifiers who used this engine finished last year's event. The Turbocharged Ford is generally quoted as The Car To Beat in '69.

MPC's 1/25 scale kit is a duplicate of the "Busong Special" that Bobby Unser drove to his '68 Indy 500 victory right down to the finely molded, turbocharged, Goosen-Drake done 4 cylinder engine and Eagle body/chassis. Even the correctly positioned sponsor decals are included in the kit, along with decals for the wild red/gold/black striping of the real car. The suspension parts, in particular, are of almost exact scale proportions to

Robert Schleicher

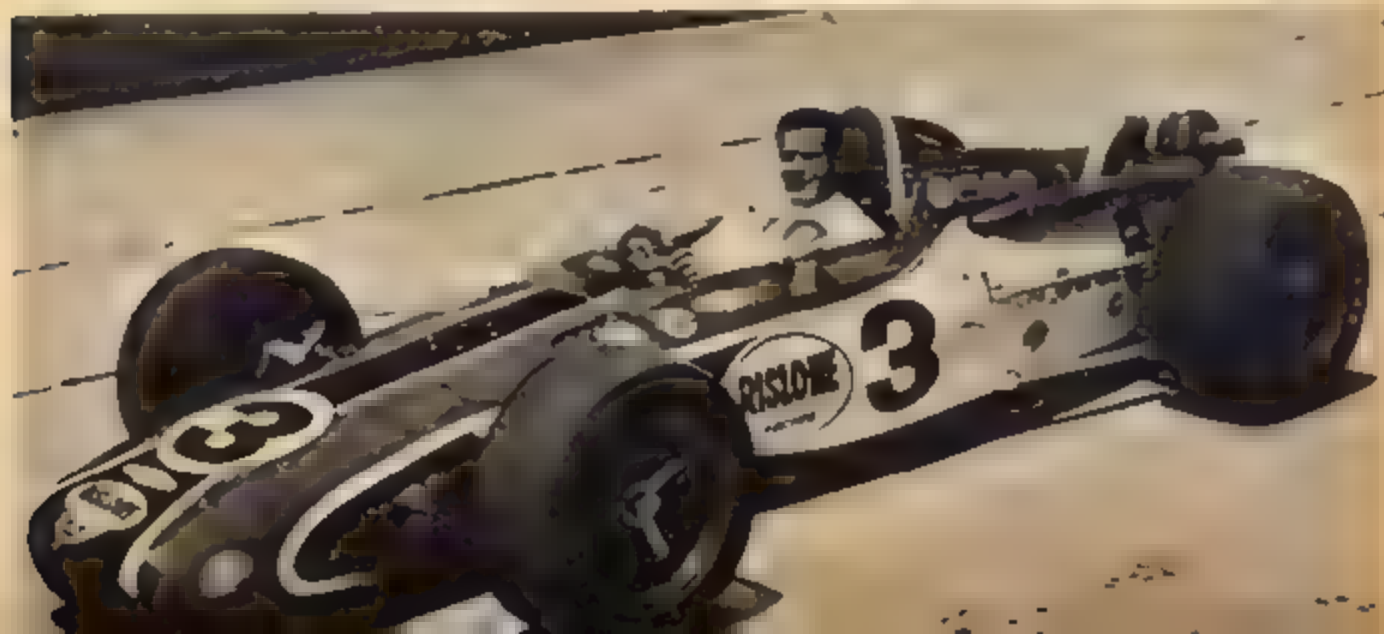
capture the "knitting needle" appearance of a modern open-wheeled racing car's suspension. A second model is included in each of MPC's "Rislorne Special" boxes, a model of the "Wheel Horse" tractor used in Indy's famous "Gasoline Alley" pit area to push the cars about.

The kit is such an accurate match for the real Indy winner, that the modeler has little to do to build a really authentic appearing miniature. Wheels, tires, engine bay, cockpit and suspension are correct as-is. You'll have to use a bit of Walther's "Solvaset" or similar decal-softener to get those fancy stripes to lay flat around the compound curves of the body. The wheels and other chrome parts were unplated alloy on the real car. A spray coat of Testor's Dulcote on all of the chrome parts (except the carburetor-mounted connections between turbocharger and manifold and the mirrors) will make the chrome plating look more like polished and/or bare alloy. The outer half of the turbocharger and the exhaust pipes should be painted with a mix of half-silver and half-black to simulate the finish of these parts on the actual car. Those with a super-steady hand can paint the "Goodyear" and the thin sidewall stripe on each tire an authentic blue.

As a final detail, the rear-view mirror can be mounted on a shim aluminum bracket to raise it to the position it occupied on the car during the actual race.

The engine bay cover is removable on the kit, so the usual attention to spark plug wiring, radiator hoses, and fuel lines will pay off in extra admiration and/or contest points as will brake lines at each wheel.

Bobby Unser's "Rislorne Special" had the right chassis/engine combination for the '68 Indy 500. MPC's kit for this car has the basic ingredients to make it a duplicate of the real thing.





From-the-box MPC kit displays correct wheels, tires, decal markings. This model hasn't even been painted—stripes and correctly-colored parts are stock kit.

Engine cover on MPC "Rislone Special" is removable with accurately-molded engine and suspension parts beneath. Full interior and chassis details are also stock kit items. Seat and tires are MPC's new soft, rubber-like plastic.



Continued

July 1969/57



Various suspension arms are almost perfect scale diameter, giving our the same ultra-light look of the real Indy winner and its competitors.



All of the turbocharged Offenhauser engine parts are plated with transmission and oil filter white on the actual car, only a portion of the intake pipe was polished with the rest of the parts in unpolished alloy finish. These paints will more closely match the correct engine colors.



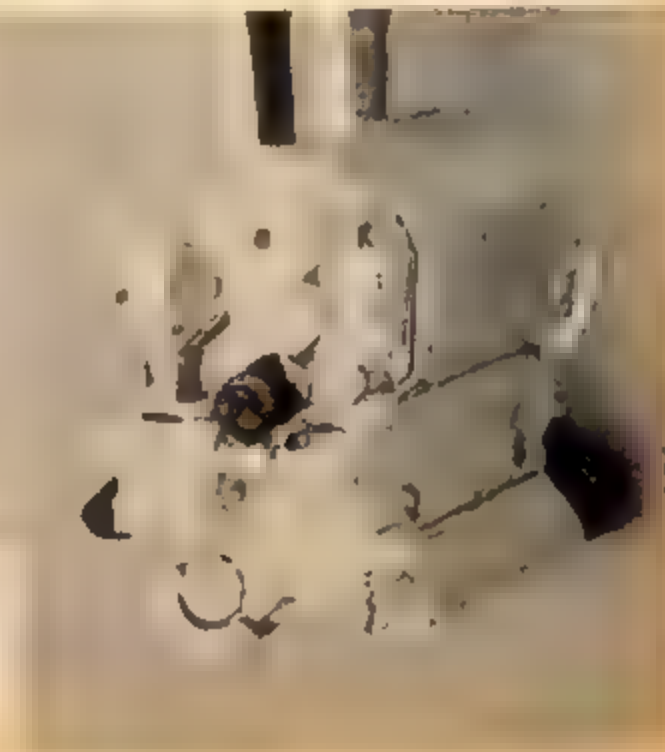
Oil filter is painted red with a gun metal top. Fram decal is from the 1/32 scale Auto World decal sheet



Engine block is sprayed with DullCote to more closely simulate unpolished alloy. Exhaust manifold and turbocharger are gun metal grey as are the injectors. The black bands on the injector/intake manifold (right) simulate rubber hose connections.



The turbocharger appears to connect the intake manifold to the exhaust manifold. In fact, there is a separating plate inside the turbocharger. The exhaust gas pressure drives a rotor on one side of the plate which turns the blower fan on the other side to supercharge the speed of intake air. Right "horn" is air intake, left "horn" exhaust exit from turbocharger



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My gag line is _____

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July 1969/69

it's sure a real "passer!"
It's no slot car, but

THE
GREAT

By
Nile C. Tammage

CAPER

MINI-BIKE

It arrived on a bright Saturday afternoon last month, delivered by our "Lil" Indian Dealer, and the Great Mini-Bike Capers began. For some time we had been looking for a mini-bike with 5 hp and front and rear suspension in kit form. Until this year it simply wasn't available. When Michrins Enterprises introduced the Model 5000-KX, we had what we were looking for.

To help our readers understand the assembly steps, we will start from the beginning.

First find a place which is comparatively uncluttered where you can work comfortably. Our recreation room proved to be ideal. Be certain that you have the proper tools handy. Only simple ones are necessary. A pair of pliers, a screwdriver and one or more two open-end wrenches can accomplish the job quite well. Socket wrenches and a wooden or plastic mallet would speed things up.

Another good point is to read the instructions carefully, not just once but at least twice before you start any of the assembly procedures. While the "Lil" Indian Kit that we worked on was practically foolproof, this simple precaution can save a great deal of bolting, unbolting and rebolting. Unpack the kit carefully. Make sure that no parts or packages of nuts and bolts are left in the wrapping material. Group the parts according to their position on the bike — front wheel assembly to one side, frame and seat in the middle and the rear wheel and its suspension system on the other side. This simple procedure can help to avoid troublesome reassembly work as the bike progresses. Put the engine aside as this is the last item to be added.

The first step is painting and finishing. In the case of the "Lil" Indian

Kit, only the frame, fork and swinging arm assembly required painting since the wheels are "mag" type and the fenders and handle bars chrome plated. Fundamental to any good paint job is absolutely clean metal. There is a slight film of oil on the frame components which has to be removed prior to priming and finishing. You may also wish to either file down or grind off any burrs or excess welding materials for a smoother finish. This should be done carefully and requires some experience.

To prepare the metal for paint, clean it thoroughly with a good solvent, such as mineral spirits or any mild acidic metal conditioner. Once the metal is clean and ready for painting, apply one or two coats of the paint included with the kit. A primer-surfacer can be used before applying

the color coats. This is a metal primer that contains a fine pigment which sets up and fills tiny cracks and crevices on the metal surface, giving an exceptionally smooth and clean job. Wet sand before applying the color coats.

Part of the fun of kit building is customizing the finish through the use of striping or the application of pattern decals. The striping takes a steady hand and practice but the decals can be applied quickly and easily. If either are used, we would suggest a clear acrylic topcoat over the material to help seal it and protect it.

Following the instruction sheet, we started our assembly at the front, putting together the front wheel, shock absorbers, fork and handle bars. These were then mounted on the frame.

The second step was the rear wheel assembly which consisted primarily of the wheel and tire, the rear shock absorbers and floating supports. Please note that this particular model has shock absorbers, both front and rear. Rear suspension is a very important factor not only for ride comfort but also for handling ease with more powerful mini-bikes.

The last step was the installation of the motor seen in Photo 5. The motor comes completely assembled, tested and tuned by the factory. All that is required is connecting the drive train, clutch, throttle cable and bolting the engine in. Completely built, we carried the bike out to the garage, put oil in the crankcase and gassed it up. It started on the first pull. From there on it has been a real joy to have and ride, particularly on camping trips. Just as important, it was really fun to build.



Painting and finishing is an excellent opportunity to customize your Mini-bike. A good paint job takes care and work but pays off in pride, appearance and in durability. The bare metal must be absolutely clean. Once the metal has been thoroughly cleaned, the next

step is the application of one or two coats of a good automotive primer-surfacer. Next come the color coats using a good quality automotive acrylic lacquer in a spray can. Wet sand each coat after it has had a chance to thoroughly dry.



The "Lil" Indian Kits come in three basic sub-assembly sections. These are the center section or frame and seat, the front wheel and front wheel suspension and the rear wheel and rear wheel suspension. Here we are installing the front assembly. The "Lil" Indian Kit which we put together contained an easily assembled system of spring loaded shock absorbers for the front wheel. These are excellent, not only for comfort but also for safety and ease of handling at higher speeds.



The rear wheel assembly came next. In the "Lil" Indian Kit, this is a simple and straight forward operation. When completed, the assembly attaches to the frame at four points. Two just behind the motor allow an up and down motion of the entire assembly and the second two points mount through spring loaded shock absorbers just under the seat. Another construction tip — although certainly not necessary — we found that an old wooden case used as a support for the frame was a great help to rapid assembly.



The final assembly step is the motor. This "Lil" Indian Kit comes with a five horsepower Briggs & Stratton four cycle engine, completely assembled and adjusted at the factory. The four cycle engine is not only more convenient than two cycle motors, it will last much longer and will run cooler and quieter. This last point is particularly important where there are local restrictions on noise levels or nervous neighbors. Note the "mag" type wheels and extra large tires for better roadability in loose sand and gravel.



Our "Lil" Indian is complete and ready to roll after a couple of hours of interesting and easy assembly. Before you turn the engine over, check and be sure there is oil in the crankcase and then test it only in a well ventilated area, preferably out of doors. Follow the engine manufacturer's instructions carefully as to break-in and lubrication. Another thing to keep in mind, now that your kit is finished and rolling are local laws and regulations. "Lil" Indian makes available as an optional accessory, a complete bike lighting kit which is necessary in many states if you are going to license your bike.



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THE EDITOR'S CHAIR

I received a letter in the mail the other day from a worried reader a letter that caused me to do some serious thinking (to which my boss would no doubt remark "Now that's unusual!"). The letter contained a question that has been asked before, by readers from all points on the compass. That question was "Is amateur racing doomed?"

What would prompt questions of that nature? Obviously the answer is not hard to find. Look around you. Everywhere you see signs that proclaim "Pro Racing" or "Pro Equipment." No wonder the amateur is getting nervous! He feels he's getting slowly but surely pushed out of slot racing!

Well I'm here to tell you that it's just not true. Pro racing which looked for a while like it was going to take over the slot racing scene, has "moved over" (without slowing down) and made room for the amateur. Many tracks have divided their racing in to two categories: amateur and pro. The U.S.R.A. people run pro and am events, and they've been hugely successful.

And the best thing is the fact that the amateur doesn't feel like a second-class citizen when he races in the amateur events. They're competitive, well run, and an absolute ball to complete in!

The price of pro racing equipment, which was getting positively frightening just a few short months ago, has taken a downward plunge—a rare thing to see in this day and age of inflation! Equipment that is the best in the history of slot racing is now selling at a reasonable rate. All of the pro manufacturers have "seen the light," and have reduced the price on their equipment without reducing the quality.

The high cost of pro racing that was slowly shutting the door on the dedicated amateur, has been opened wide again.

Amateurs of the slot racing world, you're in good shape now and the future looks even brighter. The pros are going out of their way to hold "clinics" at various progressive raceways around the country. Pros like John Cukras are freely handing out tips and advice to any fellow who has enough ambition to walk up and ask him for it.

Is amateur racing doomed? Heck no!

MCS CLUB LISTING

WACKY RACERS
14288 Rd. No. 36
Madera, Ca. 93537

The Wheelers
4122 Wesley
Schiller Park Ill. 60170

Dune Buggy Drag Club
848 Manzanita Ave.
Pasadena, Ca. 91107

Cherry Eaters
Dale Kipp
Warren Center, Pa. 18861

The Speedbombers
4152 Florida
San Diego, Ca. 92111

Southeast Racing Club
239 Galway
San Antonio, Tex. 78229

Turbine Eliminators
109 Elfrath Rd.
Huntington Valley, Pa. 19006

Speed Devils
71-04 170th St.
Flushing, N.Y. 11368

1/24 - HO SCALE

Shutterfield Raceway
6210 F. ad Ave.
Madison, Wisconsin 53711

Steven Leeds
131 17 224 Laurelton
New York, NY 11413

West Haven Racing Unitd.
135 Dalton St.
West Haven, Conn. 06516

Boogie, Inc.
2579 Fernley Dr.
Quarte, Calif. 91010

Park Forest Speedsters
75 Winslow
Park Forest, Ill. 60468
Renwick Robinson
134 Winthrop St.
Brooklyn, N.Y. 11225

Rocky Mountain Slot Car Club
Littleton, Colo. 80120

Track Twisters
1368 Flamingo Dr.
Mt. Morris Mich. 48458

Hotwheelers Club
Herick Rd.
Saxford Mass. 01921

High R's Racing Club
Cliff Beck
Cecil St.
Chesapeake City, Md 21915

B & G Racing Team
148 Ellen Dr.
Cheektowage, NY 14225

HO Squirrels
2408 S. Sawyer
Chicago, Ill. 60623

The Hobbyists Club
12000 Bamb. Pl.
Grande Hills, Calif. 91344

Half's Wheels
RR No. 5
Easley, S.C. 29840

Digital Roadrunners
10221, 132nd N.E.
Kirkland, Wash. 98033

LST Slot Racing Team
3936 N. River Rd.
Freeland, Mich. 48623

Half Drivers
69 5th St.
Cresskill, N.J. 07628

JAB
145 E. 92nd St.
New York NY 10028
Red Wings Roadrunners
Chris W. Cook
RR No. 1 Lowell Rd.
St. Johns, Mich. 48879

Krupenheimer Racing Assoc.
12751 Deen St.
Santa Ana, Calif 92706

Team BP
1713 Colonia Drive
Carbondale Ill. 62901

The Road Runners
7 Prospect St.
Nyack, N.Y. 10960

1/32-1/24 SCALE

Slotty Car Inc.
10004 Bentford Dr.
Valley Station, Ky.
40272

MESAC
3737 W. 104th St.
Inglewood, Calif. 90304

Rodent Runabouts
15 Manson Dr.
W. Peabody Mass. 01960

N.A.S.C.A.R.
40 Rhode Island Ave.
Lincoln, RI 02865

Illawarra Model Car Club
19 Cerrimal St.
Wollongong NSW
Australia 2500

Camp Hill Minic Motor Racing Club
40 Emerit St.
Camp Hill 4152
Brisbane Qld. Australia

Hot Slots Slot Car Club
3777 Pasadena Ave.
Detroit, Mich. 48236

Mequon Racers
1707 W. El Rancho Dr.
Mequon, Wis. 53092

Yates Racing Team
Courthouse Pt. Rd.
Chesapeake City, Md. 21915

Tr. State Model Car Racing Club
3238 Main St.
Weirton W. Va. 26062

Dragville Inc.
189 Barnard Ave.
New York, N.Y. 10307

United Invitational Club
10610 E. Lynrose
Tempe City, Calif. 91780

G.P. Racing Assn
32 Green Acorn Lane
Henrietta, N.Y. 14487

Rensgrades
404 South C. Inter
Co. Nevada, Ill. 62234

K&H Mod Models
255 N. Park Blvd.
Glen Ellyn, Ill. 60137

B&G Motors, Inc.
1400 Carter St.
Troy Mich. 48064

King of the Road
26 Adams St.
San Francisco, Calif.
94112

Ramchargers
830 Bear Valley Pkwy.
Escondido, Calif. 92028

Pythons
Mr. Garold Brooks
3019 E. Berwyn
Indianapolis, Ind. 46203

The Assembly Drag Club
173 McKim Ave.
Clintonsville, Wis. 54929

Chavens Racing Assn
2519 7th Ave.
East Moline Ill. 61244

Midwest Drivers Club
9858 Keystone
Skokie, Ill. 60076

Torque Club
7106 Alverstone Ave.
Los Angeles, Ca. 90046

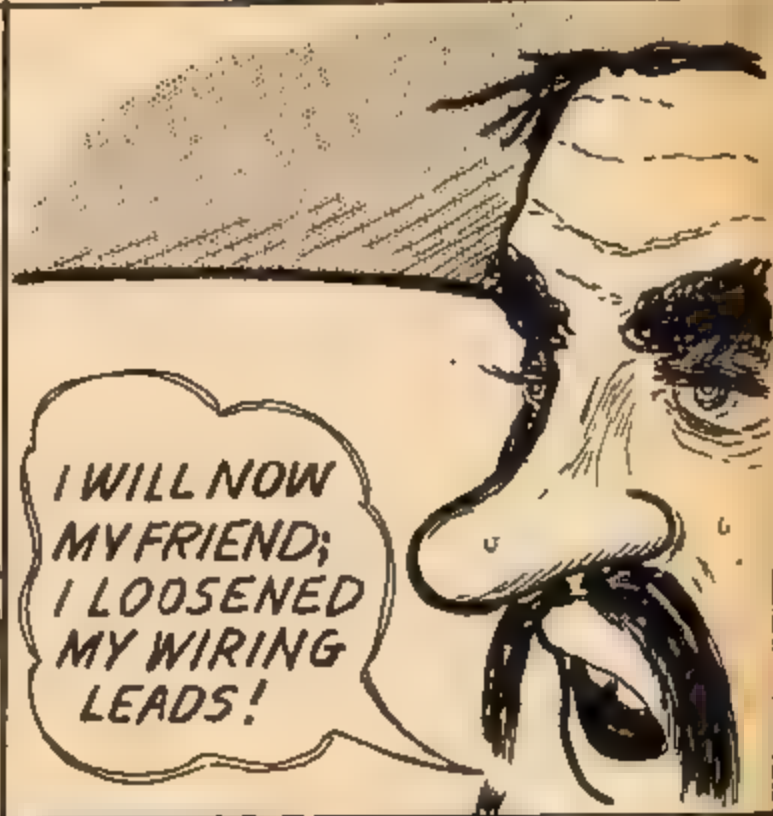
Brook & Bradley
1948 Tallman
Indianapolis, Ind. 46200

Moody Blues Slot Car Club
9825 St. Peter
Apartment No. 3
Indianapolis, Ind. 46227

Urbans Underground
2055 West Route 29
Urbans, Ohio 43078

SPEEDY

by PUCKETT



NATIONAL RACE CALENDAR

JUNE

7th - THIRD NEW YORK CAR MODEL

Buzz A. Rama, 69 Church Ave., Brooklyn, N.Y. GP Cars. Battery Powered American Modified Emperor 220' Track. National Championship Rules. Tech Inspection 11 A.M. to 1 P.M.

7th - SIXTH NEW ENGLAND CAR MODEL

Richie's Hobbies, 530 Sumner Ave., Springfield, Mass. GP Cars. 220' Battery Powered Track. Telephone 413/739-9593 (Al Ryll).

7th - U.S.R.A. AMATEUR

Speed & Sport Racing Center, 11187 Long Beach Blvd., Lynwood, Calif. Telephone 639-9209 (Ron Granlee). GT Coupes; \$3.50 entry fee; National Championship Rules.

14th - PISMO BEACH MINI ARCO Pismo Raceway, 175 Pomeroy Ave., Pismo Beach, Calif. Regional Amateur race sponsored by Champion.

14th - FIRST WASHINGTON AREA CAR MODEL

Mr. John's Hobbyland, No. Point Village Shopping Cntr., North Point Blvd., Baltimore, Md. Telephone 301/388-0233. Open Sports cars; 150' Red American battery powered track.

14th - FIRST PHAZE II INTERNATIONAL PRO-AM

Classic Raceway, 3728 Blanding Blvd., Jacksonville, Florida. GT/Sports Cars. Custom Track similar to Blue American; Super Battery Power. National Championship Rules. \$1,000 merchandise prizes; \$300 cash guaranteed to winner; \$5 for 2nd through 4th. Telephone 904/771-8635 (Nick Nichols).

14th - FIRST INDIANA CAR MODEL HO CHAMPIONSHIP RACE

Maurora, 4749 North Franklin, Lawrence, Ind. 46226. Free Practice 10 A.M. to 2 P.M. Tech Inspection 2.30 P.M. (six races in series) HOPRA Rules.

21st - U.S.R.A. PRO

Speed & Sport Racing Cntr., 11187 Long Beach Blvd., Lynwood, Cal. Telephone 639-9209 (Ron Granlee). GT Coupes; \$5.00 entry fee; National Championship Rules.

21st - FIRST GREAT LAKES CAR MODEL

Shores Raceway, 23109 Harper St., Clair Shores, Mich. Telephone 313/772-2268. GP Cars; American King Track.

28th - SPEED & SPORT INVITATIONAL

Speed & Sport Racing Cntr., 11187 Long Beach Blvd., Lynwood, Calif. Telephone 213/639-9209 (Ron Granlee). For factory and raceway teams, by invitation only. \$25 entry fee. GT Coupes.

JULY

4th & 5th - SOUTHWEST PRO-AM OPEN INVITATIONAL

Northlake Speedway, 434 North Lakes Shopping Center, Dallas, Texas 75238. Telephone 806/763-1436 (Dave Shires). Open invitation extended to all Pro and Amateur drivers. 210' Custom battery powered track; epoxy surface; Sports Cars; National Championship Rules. Prizes: \$500 to winner of Pro Main; trophy donated by Car Model for winner of Amateur Main; Cash for Pro events only; merchandise for Amateurs.

5th - HORRDS - CAR MODEL

HO Road Racing Drag Syndicate, 6957 Ash Ave., Gary, Indiana 46403. Can-Am Sports, HO scale.

12th - FIRST LOS ANGELES CAR MODEL

Checkered Flag Raceway, Westminster Blvd., Westminster, Calif. Sports Cars; Checkered Flag 160' Blue Track, 400 Amp battery power, epoxy surface.

12th - SECOND WASHINGTON AREA CAR MODEL

D & D Amusement Cntr., 561 Centerville Rd., Manassas, Va. Telephone 703/361-2430. Closed Sports Cars; 155' battery powered Blue American King.

19th - FOURTH MID-ATLANTIC CAR MODEL

Grand Prix Model Raceways, Woodbury, N.J. Telephone 215/644-9812. Closed Sports cars.

26th - SECOND GREAT LAKES CAR MODEL

Hobby Stop West, 2842 Sylvania Ave., Toledo, Ohio. Telephone 419/475-1991. American King Track; GT Sports Cars.

THE TECH SHEET

Each month I get literally tons of mail from all parts of the country (a lot of foreign countries, also) asking where they can get this or that hot motor, frame, or controller. I have a couple of stock answers depending on the scale they are using.

If it is 1/24th or 1/32nd and they want the latest pro equipment, I suggest they write to Parma International Raceways, Dept. MCS, 5421-B Pearl Road, Cleveland, Ohio, Zip Code 44129, and include a self-addressed envelope for a catalog. Parma carries all the major brands of pro equipment, such as: Mura, Lenz, Dynamic, Certus, Dyna-Rewind, Cobra, Champion, Rehco, Phase III, Thorpe and even the specialty type custom rewinds of Zimmerman and Steube. The list of items put out by other companies is endless such as Mini Wheels bodies along with Riggins, Dynamic, and Lancer.

So whether it is wheels or bodies or whatever, write for a catalog and please, when ordering by mail include more than enough to include the return postage and save yourself and Parma a lot of extra work and worry.

If you want a real pro type controller with double micro switches then I can recommend Parma's own modified Russkit controller without question. Almost all the big pros are using Parma controllers or variations of it, such as Emmott's modified Russkit. Each person who modifies a Russkit adds his own little trick but basically they are the same as a Parma controller.

If H.O. scale is your cup of tea and you can't find the items you want locally then I have one stock recommendation, and that is to send 25 cents to The Hobby House, Dept. MCS, 1312 North 18th, Monroe, La., 71201, and get their catalog of all the H.O. Speed and hop up equipment. Rich Harrison carries the most and latest items in H.O. and also does custom work on motors as well as complete all-out cars.

No list would be complete without mentioning Auto World and Polk Hobbies for both 1/24th and 1/32nd as well as H.O. equipment by mail order. Auto World's catalog is 60 cents which is refundable with your first order of over \$2.00 and the address is Auto World, Dept. MCS, 701 North Keyser Avenue, Scranton, Pa., 18508. Polk's address is Polk's Hobbies, Dept. MCS, 314 - 5th Avenue, New York 10001. Their catalog is 50 cents which is refundable on your first order also.

The following advice applies to all mail ordering transactions. First, obtain the catalog and order directly from it using a complete description of the item you wish to order. Then, follow the mailing instructions and enclose enough money, as they will refund any excess to you. You will always get fast service this way.

Next, don't attempt to order items not in the catalog such as a Greyhound

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bus in 1/24th scale. Simply assume that if it isn't listed in the catalog, chances are the item is not produced or is no longer available. For instance, don't write asking if any company makes 1/24th scale track side figures or buildings or a model of the car used in T.V.'s Green Hornet series, because none of these have ever been manufactured. Mail order companies are not a clearing house for information; they sell the merchandise listed in their catalogs and that is all.

If it is H.O. figures or buildings, you need the best source for companies specializing in these items are listed in railroad magazines such as Model Railroader or Railroad Model Craftsman. Nathan R. Preston and

Company, Dept. MCS, Box 187, Des Plaines, Illinois 60017 has a catalog of H.O. buildings for 35 cents and H.O. car catalog for another 35 cents.

Auto World does carry some H.O. figures and track scenery and so does Polk's. The 1/32nd figures and buildings are also available from both of these companies.

I don't know quite how I got started on this subject. Possibly it was because so much of my mail lately has been, "who makes this?" or "Where can I get that?"

I had intended to deal strictly with the technical aspects of this Tech-Sheet as the name implies, but maybe these questions as to where to find things not available locally have their technical implications.

Frankly, I'm not at home with the strict technical aspects of this sport so I'd better stay where I belong.

I have had quite a few letters from readers asking where they can get high temperature epoxy and I find myself sending them off by saying there are a lot of different brands of epoxy around but the high temp ones are expensive, even in the smallest quantities you can buy (which is usually a pint size). Yes, Mini Wheels has had their two-part epoxy out for some time and I have recommended it, rather than tell people they should spend 10 or 15 dollars on the exotic epoxies.

Now after all this time Mura has started to sell their own one-part epoxy for \$1.50 in one ounce bottles and I for one am mighty pleased to see it on the market. This is the same epoxy as used in the Mura motors, so it is high temp. The instructions say to cure at 400 degrees F for 1/2 hour and they recommend you use the Mura-Lenz armor plated wire, and for good reason. The Mura wire is good for 900 degrees F. or above, and older Formvar wire just won't stand 400 degrees F. curing temperatures.

I've worked and experimented with this epoxy for the last month so you can take the following for what it is worth. The one-part epoxy works best with Mura-Lenz wire, of course, because you don't have to worry about getting the armatures too hot and ruining the insulation. It appears that curing at a higher temperature, say 450 degrees or 500 degrees is not only safe but gives an even harder, stronger bond. If you cure longer than the recommended half-hour, say up to two hours, it gives a better bond especially if you use a higher curing temperature. You also get better penetration if the armature is slightly warmed before dipping into the epoxy.

Now the question comes up: Can you use this epoxy with other wire such as Polythermalex or Polythermalex (Simco wire 200 degree C.)?

The best answer I can give you is a qualified "yes," if you cure the epoxy at about 375 degrees F. and let it cure for say four hours or more — preferably eight hours.

I'll explain this. Polythermalex,

according to the label I have, says, "This wire has a temperature rating of 180 degrees C. but has been improved so temp rating is now 190 degrees C."

Temperature ratings, as such, are somewhat relative because there is a safety factor built into the rating. In other words, if a wire is rated at 200 degrees C. (as Simco) it merely means that it will safely stand that temperature for so many hours without damage. It is also true the wire will take even higher temperatures without damage, but the manufacturer will not guarantee it.

So, with these facts, plus the old school book conversion factor that centigrade temperature multiplied by nine and divided by five, then adding 32 degrees, we obtain the fahrenheit temperature. By this then, 200 degrees centigrade works out to be 392 degrees fahrenheit. Now that is so close to 400 degrees that we cure the Mura epoxy without cutting into the safety factor so it looks all right.

Now, I made my recommendation of curing at 375 degrees F to be completely on the safe side so I won't be accused of ruining your armatures. I have wound about a dozen or so armatures using Polythermalex wire (200 degrees C. or 392 degrees F. (Simco)) and curing at 400 degrees F. for up to an hour without a failure or breakdown of insulation, but I will not take it upon myself to say it won't happen to you or me. I can't predict or guarantee what would happen with a different brand of wire listed as a polythermalex that you might pick up in a radio supply store because it might be rated at 180 degrees C. (356 degrees F.). It might run a short time, then blow, or more likely just run hotter than blazes from a high temperature "short."

From my own experience I have found that using Simco's wire in double 27 or 28, I can get by with 400 degree curing. (Simco's largest size is No. 25 in single.) If I go to large wire like single 24, I prefer Mura high-temp wire, curing at 500 degrees for two hours or so, because it gives a stronger bond and I'm not as likely to "throw a wire" when running.

I have one note of caution about this epoxy and it doesn't mention this on the bottle. This epoxy has a lot of volatile vapors, and it is a good idea to let the armatures air dry for a couple of hours after dipping, and before putting them in an oven to cure, especially a gas oven. I'd hate to think of some one blowing up a kitchen in an attempt to cure an armature. My wife is fearful of just such a fire, so being the head of the house, ruler supreme, and master of my own destiny she won't let me even get near her precious oven. So a long time ago I had to go out and buy my own darn broiler-oven and keep it out in the work shop in order to cure armatures. So now how does that grab you? Play it safe and air dry your armatures before curing the epoxy.

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